TC-K81

US Model
Canadian Model
AEP Model
UK Model
E Model

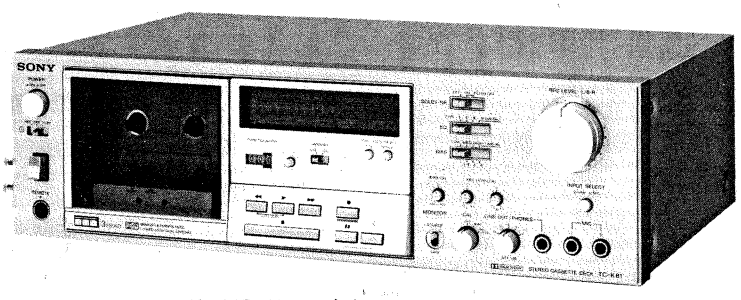


Photo: AEP, UK, US, E model

STEREO CASSETTE DECK

SPECIFICATIONS

GENERAL

Power Requirements:
AEP model
220V ac ~, 50/60 Hz
(240V ac ~ adjustable by authorized Sony personnel)
UK model
240V ac ~, 50/60 Hz
(220V ac ~ adjustable by authorized Sony personnel)
US, Canadian model
120V ac, 60 Hz
E model
110, 120, 220 or 240V ac ~, 50/60 Hz

Power Consumption: 28W (AEP, UK, E model)
26W (US, Canadian model)

Dimensions: Approx. 430(w) x 130(h) x 290(d) mm
17(w) x $5^1/_8$(h) x 11½(d) inches
(AEP, UK, US, E model)
Approx. 460(w) x 130(h) x 290(d) mm
$18^1/_8$(w) x $5^1/_8$(h) x 11½(d) inches
(Canadian model)
including projecting parts and controls

Weight: Approx. 6.3kg, 13 lb 14 oz (AEP, UK, US, E model)
Approx. 7kg, 15 lb 7 oz (Canadian model)

– Continued on page 2 –

SAFETY RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

Tape Transport Mechanism Type	TCM-100V2	
	Specification	**Test Equipment**
Forward Torque	28–43 g·cm (0.39–0.59 oz·inch)	Sony torque meter CQ-102C
Back Tension Torque	2.5–4.5 g·cm (0.04–0.06 oz·inch)	Sony torque meter CQ-102C
Pinch Roller Pressure	• Take-up Side 280–380 g (10–13 oz) • Supply Side 180–280 g (7–10 oz)	Spring scale or tension gauge

SONY

SERVICE MANUAL

TAPE RECORDER SECTION

Recording System: 4-track 2-channel stereo

Fast-forward and Rewind Time: Approx. 80 sec. (with C-60)

Frequency Response: DOLBY NR OFF

AEP, UK, E model

- With TYPE IV cassette (Sony METALLIC)
  20–20,000 Hz
  30–18,000 Hz (±3 dB)
  30–13,000 Hz (±3 dB, 0 VU recording)
  30–18,000 Hz (DIN)
- With TYPE III cassette (Sony Fe-Cr)
  20–20,000 Hz
  30–18,000 Hz (±3 dB)
  30–18,000 Hz (DIN)
- With TYPE II cassette (Sony CD-α)
  20–19,000 Hz
  30–17,000 Hz (±3 dB)
  30–17,000 Hz (DIN)
- With TYPE I cassette (Sony BHF)
  20–17,000 Hz
  30–15,000 Hz (±3 dB)
  30–15,000 Hz (DIN)

US, Canadian model

- With TYPE IV cassette (Sony METALLIC)
  20–20,000 Hz
  30–18,000 Hz (±3 dB)
  30–13,000 Hz (±3 dB, 0 VU recording)
- With TYPE III cassette (Sony Fe-Cr)
  20–20,000 Hz
  30–18,000 Hz (±3 dB)
- With TYPE II cassette (Sony EHF)
  20–19,000 Hz
  30–17,000 Hz (±3 dB)
- With TYPE I cassette (Sony HFX)
  20–17,000 Hz
  30–15,000 Hz (±3 dB)

Wow and Flutter: 0.04% WRMS (NAB), ±0.12% (DIN) (AEP, UK, E model)

0.04% WRMS (US, Canadian model)

S/N Ratio: DOLBY NR OFF

AEP, UK, E model

- With TYPE III cassette (Sony Fe-Cr)
  60 dB at peak level (NAB)
  59 dB (DIN, 1975, rev.)
- With TYPE II cassette (Sony CD-α)
  58 dB at peak level (NAB)

US, Canadian model

- With TYPE III cassette (Sony Fe-Cr)
  60 dB at peak level
- With TYPE II cassette (Sony EHF)
  58 dB at peak level

DOLBY NR ON
Improved by 5 dB at 1 kHz, 10 dB above 5 kHz

Total Harmonic Distortion: 0.8% (with Sony Fe-Cr cassette)

Bias Frequency: 105 kHz

Inputs:
Microphone inputs (phone jacks) . . . 2
sensitivity 0.25 mV (–70 dB)
for a low-impedance microphone
Line inputs (phono jacks) 2
sensitivity 77.5 mV (–20 dB)
input impedance 50 kΩ

Outputs:
Variable line outputs (phono jacks) . 2
maximum output level 0.435 V (–5 dB)
at load impedance 50 kΩ
with LINE OUT level control at "0"
variable range of output level
–5 to –29 dB (5 steps)
suitable load impedance more than 10kΩ
Fixed line outputs (phono jacks) . . . 2
output level 0.435 V (–5 dB)
at load impedance 50 kΩ
Suitable load impedance
more than 10 kΩ
Headphone output 1
variable range of output level
–20 to –44 dB (5 steps)
at load impedance 8 Ω

0 dB = 0.775 V

LED PEAK PROGRAM METERS

Response Range: –40 dB to +8 dB

Frequency Response: 20 Hz –20,000 Hz ±1.5 dB

Response Time: 1 millisecond

Decay Time (from 0 dB to –20 dB): 750 milliseconds

Overshoot: None

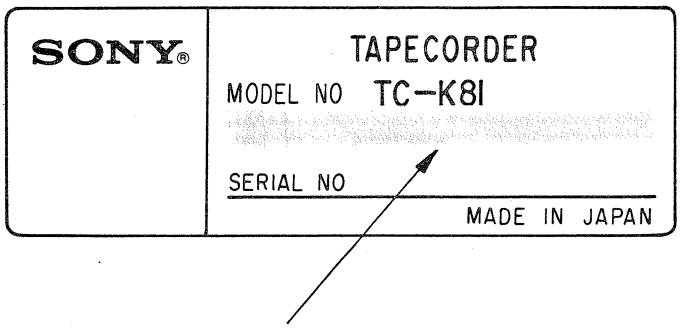
Indicator Elements: 16 elements for each channel

SERVICING NOTE

When the top cover is removed, the internal photo transistor may pick up stray light and shut the set off.

MODEL IDENTIFICATION

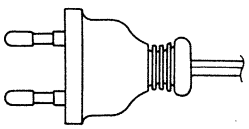
– Specification Label –



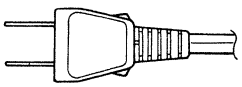
US, Canadian Model:	AC 120V 60Hz 26W
AEP model:	AC 220V~ 50/60Hz 28W
UK model:	AC 240V~ 50/60Hz 28W
E model:	AC 110, 120, 220, 240V~ 50/60Hz 28W

– Power Cord –

E model: euro-plug 1-534-817-XX



E model: parallel-blade plug 1-551-473-31



Handling Precautions for MOS ICs

Generally, the insulation resistance of the oxide layer in MOS IC structures is very high, and the oxide layer is very thin. Because of this, it is possible that the static voltages usually present on clothes and the human body will be enough to generate a potential difference across the insulator, high enough to cause a breakdown of the insulating layer.

The following precautions should be taken while handling these ICs.

(Particular care should be taken under conditions of low humidity.)

Precautions in Replacing MOS ICs

1. Store new ICs by inserting them into a urethane-polyester cushion (which is somewhat conductive), or wrapping it in aluminum foil, so that all the pins are at the same potential.
   (The ICs should be stored in that manner until mounted on the circuit board.)

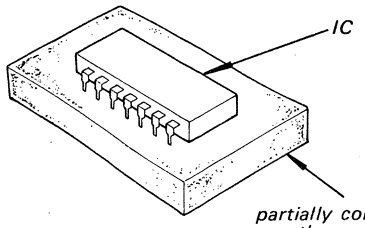


Fig. A

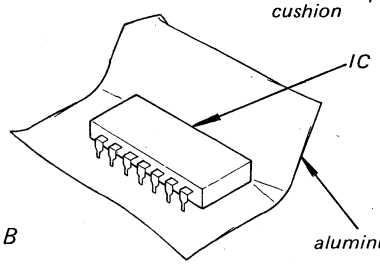


Fig. B

2. Check the soldering iron for possible power-line leakage current. Make sure that there is no leakage path by connecting an ohmmeter to the tip of the soldering iron and the plug as shown in Fig. C. If there is a leakage path, use some other soldering iron.

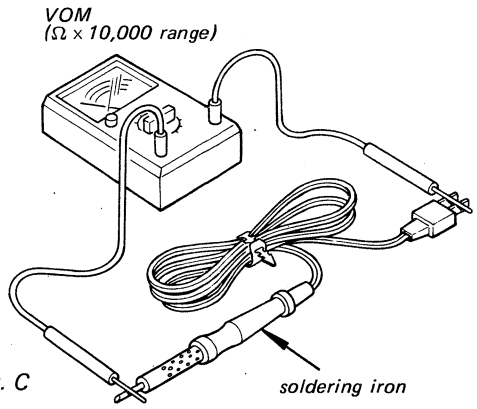


Fig. C

3. Equalize any potential difference between the clothes, the tools in use, the work bench, the set being worked on, and the packaged IC by touching them all in succession with the hands or a conductive wire or tool.
4. The following are effective methods for handling ICs that remove the potential difference across the oxide layer.
   - Use a paper clip modified by soldering in a wire braid insert.

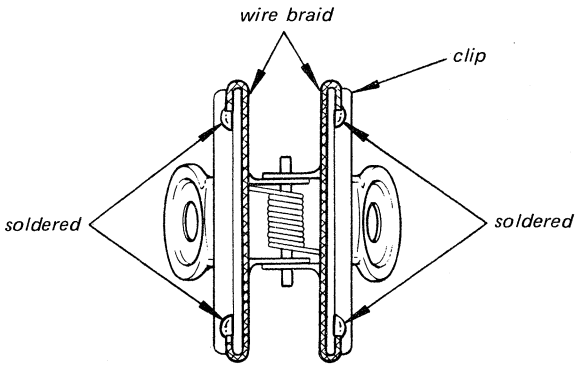


Fig. D

Make sure that there is no solder on the inside.

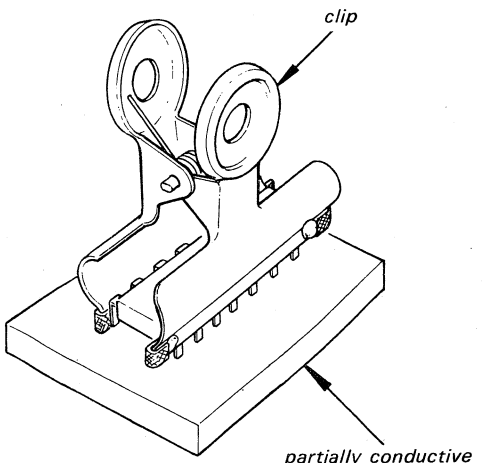
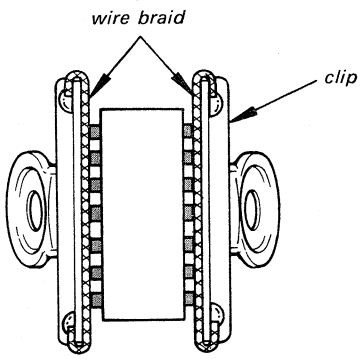


Fig. E



Make sure that all the pins are in contact with the wire braid (all the pins will then be at the same potential.).

Fig. F

- Take a short length of fine bare wire and wind it around the IC so that it shorts all the pins of the IC, while it is still in the urethane-polyester cushion or aluminum foil. This ensures that all the pins are at the same potential.

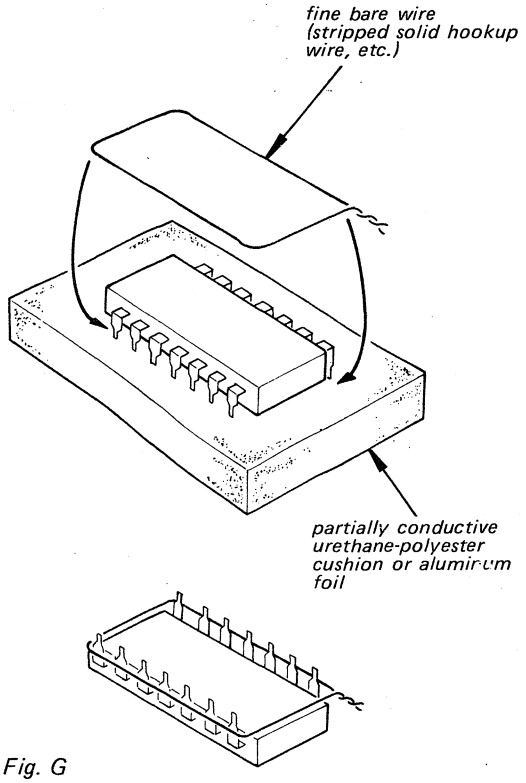


Fig. G

- When it is necessary to handle the IC with the fingers, do not touch any pin, and hold the IC at the ends of its plastic-package case as shown in Fig. H.

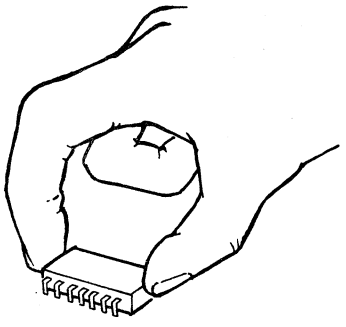


Fig. H

5. Method of Mounting
Insert the IC while holding it with the modified clip, and solder all the pins with the clip still shorting the pins. (Similarly, solder all the pins while the bare shorting wire is still wound around them.). Remove the clip or the bare shorting wire only after all the pins have been soldered.

Precaution while Checking C-MOS ICs

The C-MOS ICs (Complementary MOS) are MOS ICs that have their output sections made up of N-channel and P-channel push-pull stages to increase their speed of operation. If the output terminal of these ICs comes into contact with B+ or B– voltage, then the FET which is ON at that time will either become shorted or open.

This is valid for all the output sections that are connected together by the interconnections. Even the circuits that are physically separated (and not on the same board) can be destroyed simultaneously.

Example:

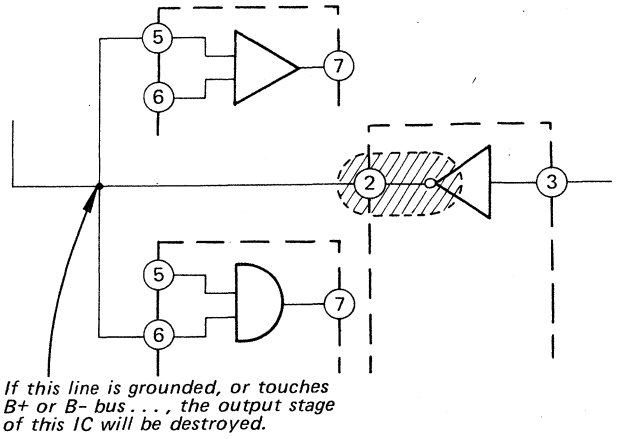
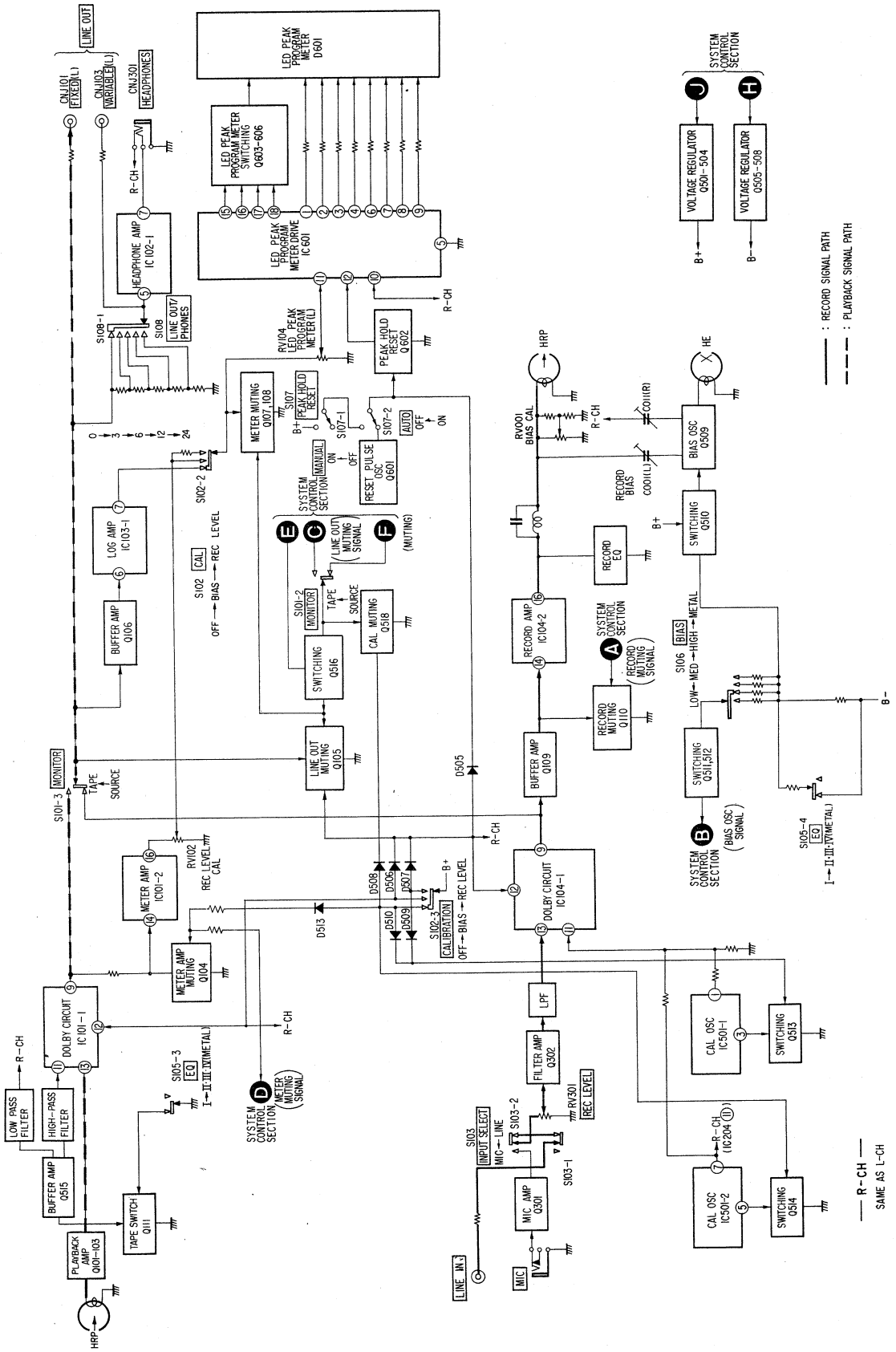


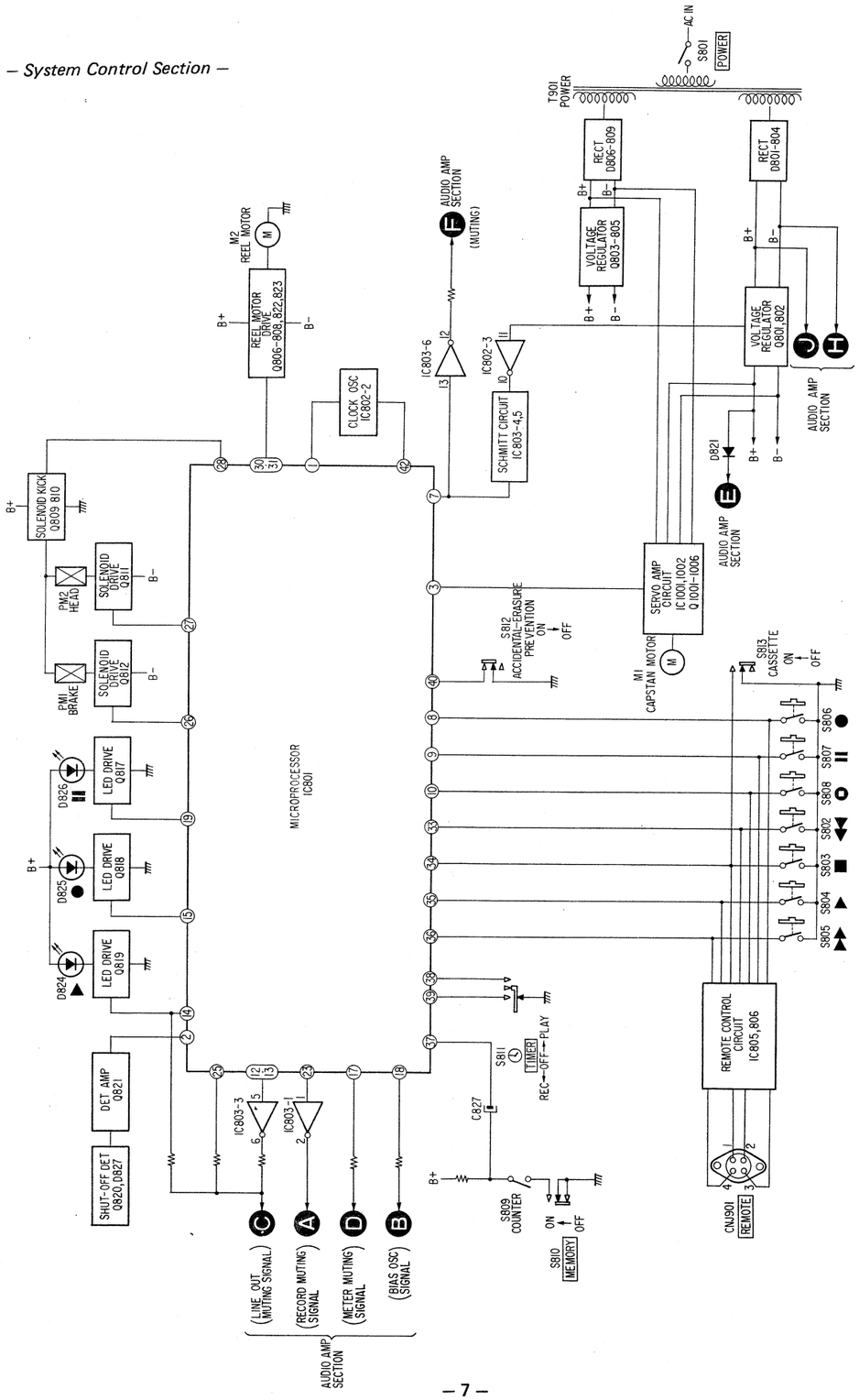
Fig. I

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM — *Audio Amp Section* —



– System Control Section –

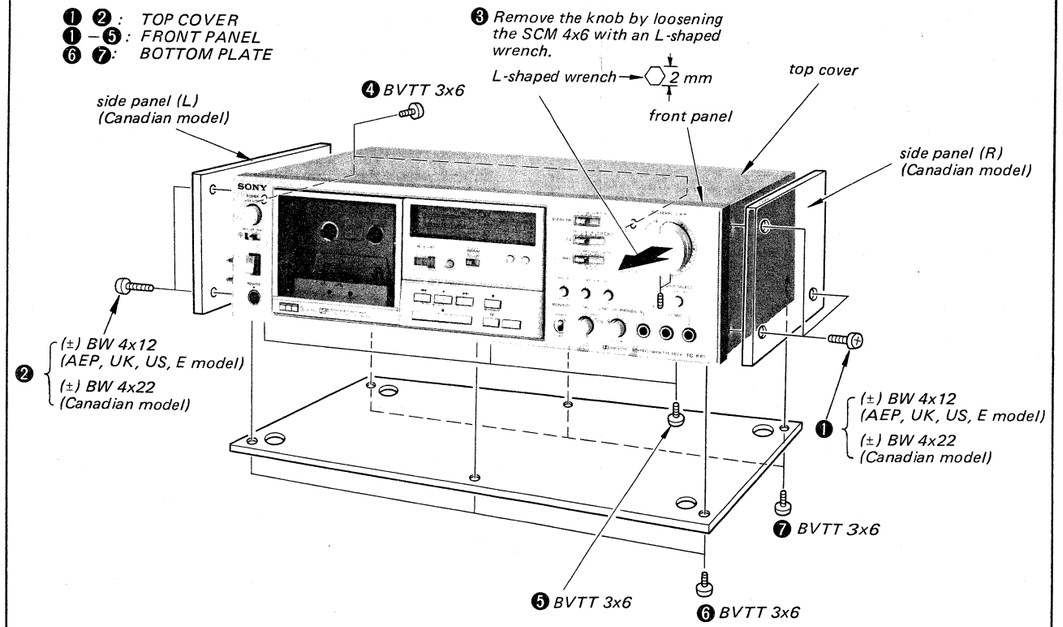


SECTION 2
DISASSEMBLY

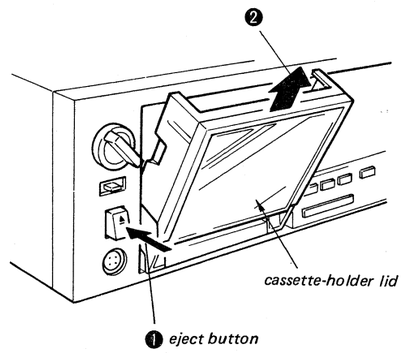
- Follow the disassembly procedure in the numerical order given.

TOP COVER/FRONT PANEL/BOTTOM PLATE REMOVAL

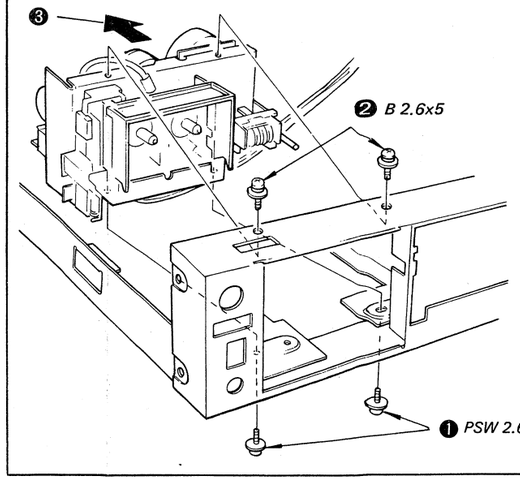
❶ ❷ : TOP COVER
❶ – ❺ : FRONT PANEL
❻ ❼ : BOTTOM PLATE



CASSETTE–HOLDER LID REMOVAL



MECHANICAL BLOCK REMOVAL



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

   record/playback head — pinch rollers
   erase head — rubber belts
   capstans — idlers

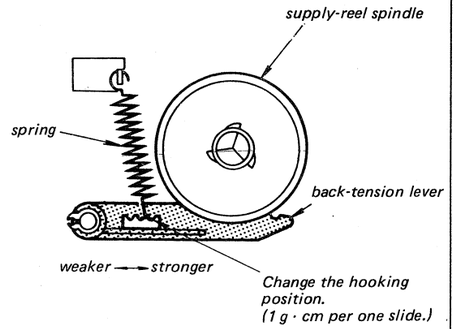
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

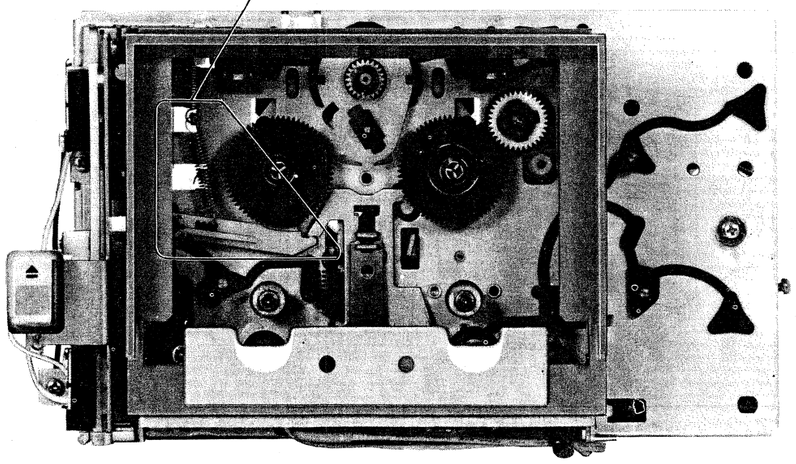
Torque Measurement and Back Tension Torque Adjustment

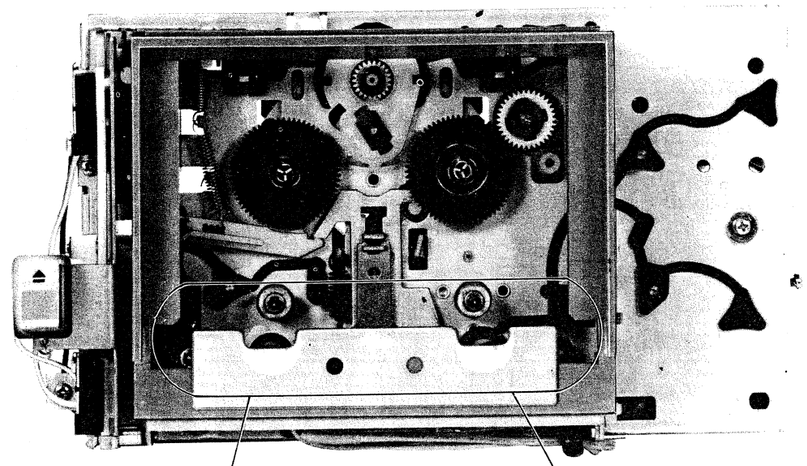
1.

Torque	Torque meter	Meter reading
Forward	CQ-102C	28–43 g · cm (0.39–0.59 oz · inch)
Back tension	CQ-102C	2.5–4.5 g · cm (0.04–0.06 oz · inch)

2. If the specified back-tension torque is not obtained, change the hooking position.

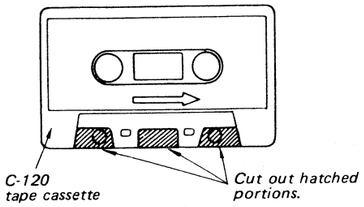




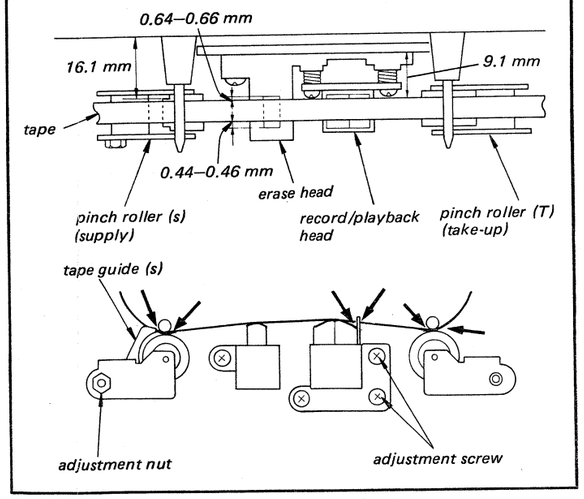


Head Height Adjustment

1. Prepare an adjustment cassette as shown below.

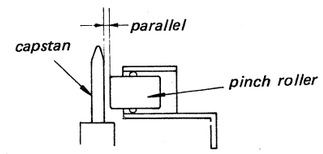


2. Inplayback mode and viewing from the front, adjust the head heights to eliminate tape curl and tape twist at portions shown by arrows.

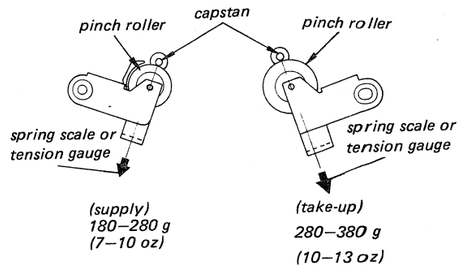


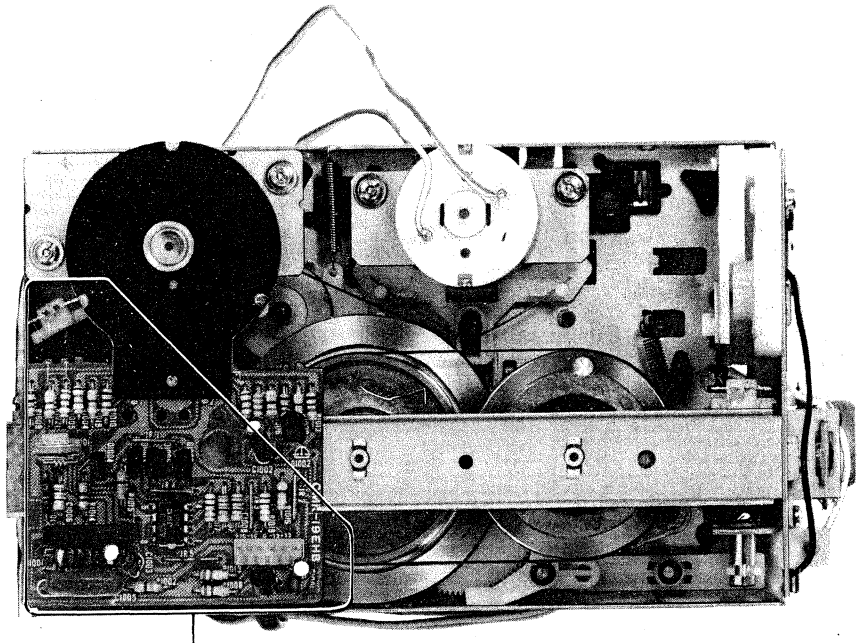
Pinch Roller Pressure Measurement
– Forward Mode –

1.



2. Slowly pull the pinch roller and read the spring scale or the tension gauge just when the pinch roller stops rotating.





Brake Solenoid (PM1) Position Adjustment

– Stop Mode –

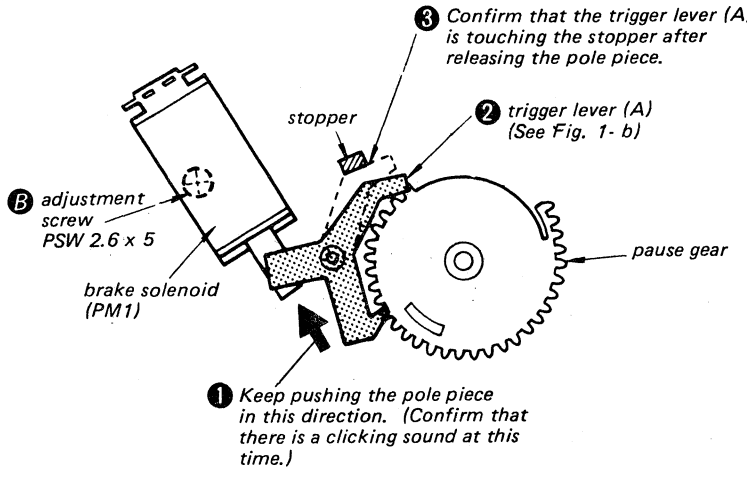


Fig. 1-a

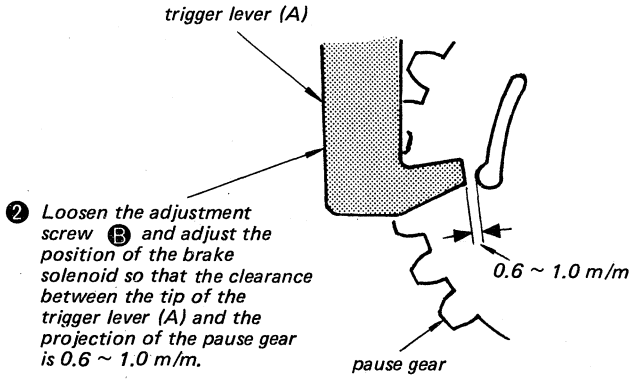
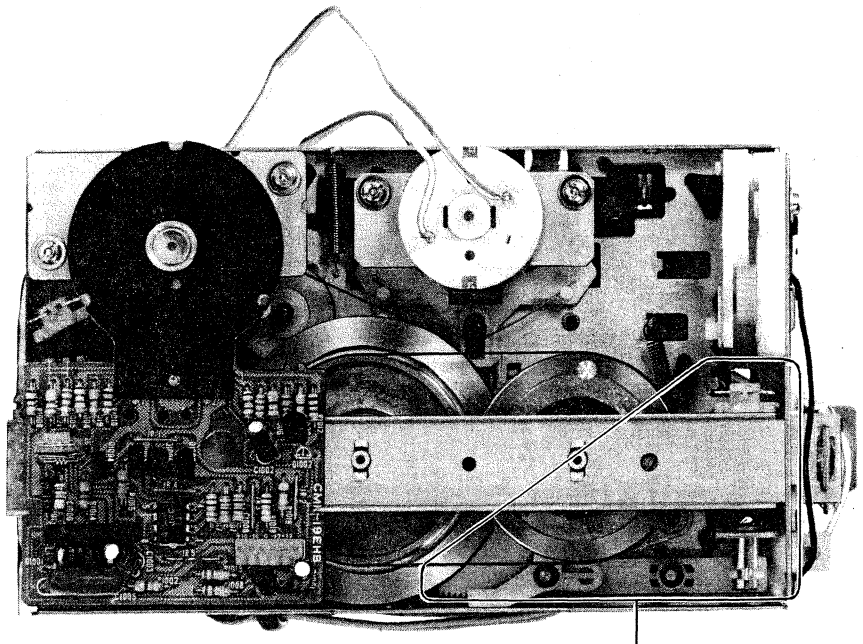


Fig. 1-b



Head Solenoid (PM2) Position Adjustment

– Stop Mode –

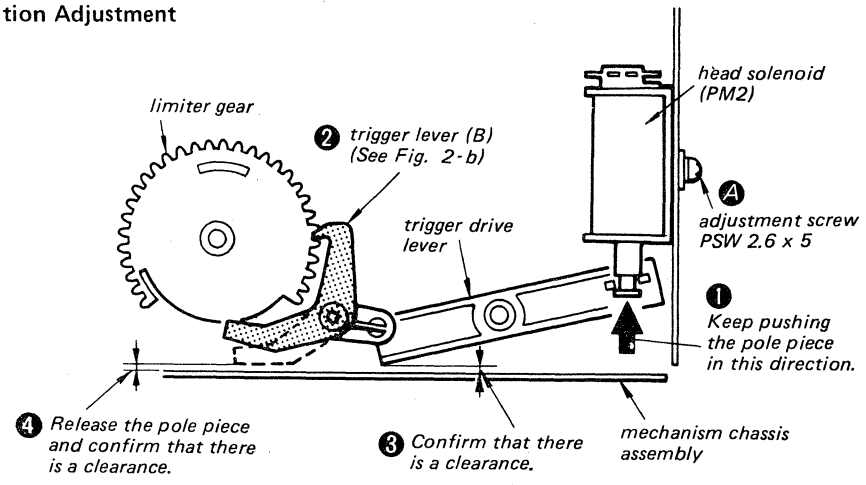
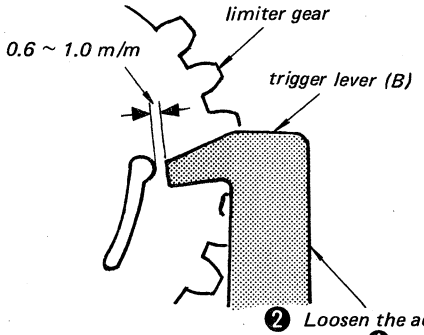


Fig. 2-a



❷ Loosen the adjustment screw Ⓐ and adjust the position of the head solenoid so that the clearance between the tip of the trigger lever (B) and the projection of the limiter gear is 0.6 ~ 1.0 m/m.

Fig. 2-b

3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

- Set the BIAS and EQ switches according to the tape as follows.

Tape	BIAS switch	EQ switch
CS-10	MED	TYPE I
CS-25	HIGH	TYPE II
CS-30	MED	TYPE III
CS-40	METAL	TYPE IV

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch:	OFF
EQ switch:	TYPE I
BIAS switch:	MED
MONITOR:	TAPE
CALIBRATION:	OFF
INPUT SELECT:	LINE

- Standard Record:

  Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

	MIC	LINE IN
source impedance	300 Ω	10 kΩ
input level	0.77 mV (−60 dB)	0.25 V (−10 dB)

Standard Output Level

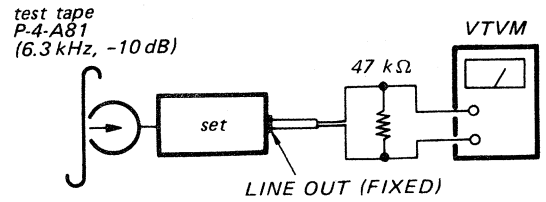
	LINE OUT (FIXED)	HEAD-PHONES
load impedance	47 kΩ	8 Ω
output level	0.44 V (−5 dB)	77 mV* (−20 dB)

* with HEADPHONES/LINE OUT level control at "10".

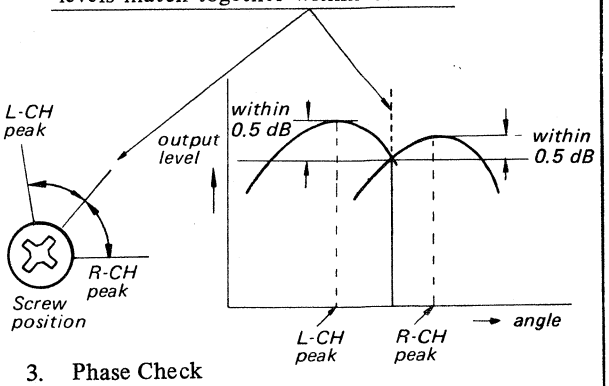
Record/playback Head Azimuth Adjustment

Procedure:

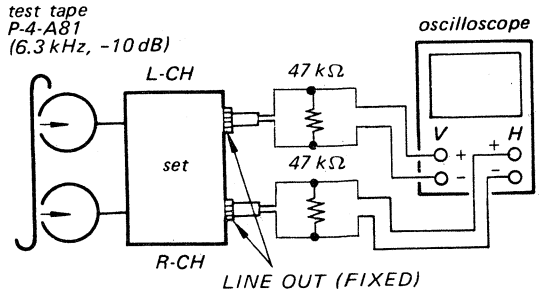
1. Mode: playback

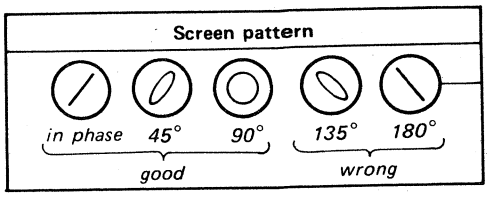


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.

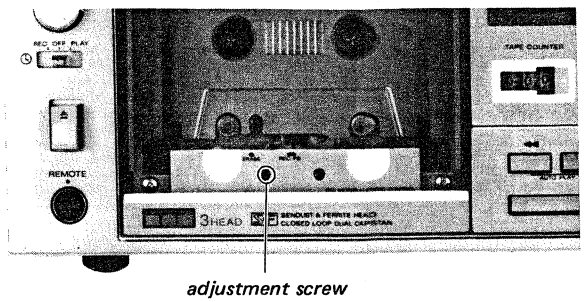


3. Phase Check
   Mode: playback





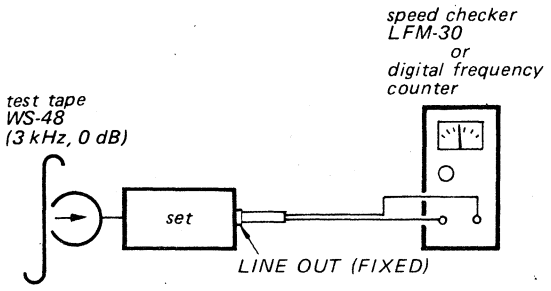
Adjustment Location:



Tape Speed Adjustment

Procedure:

Mode: playback



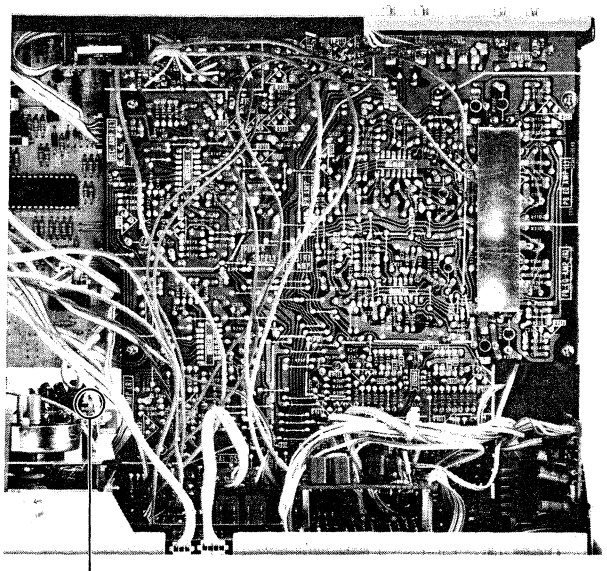
Specification:

Speed checker	Digital frequency counter
−0.7 to +0.7%	2,980 – 3,020 Hz

Frequency difference between the beginning and the end of the tape should be within 0.7% (20 Hz).

Adjustment Location:

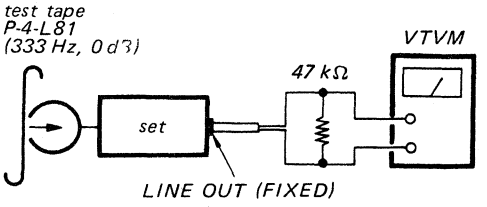
– servo amp board –



Playback Level Adjustment

Procedure:

Mode: playback



Specification:

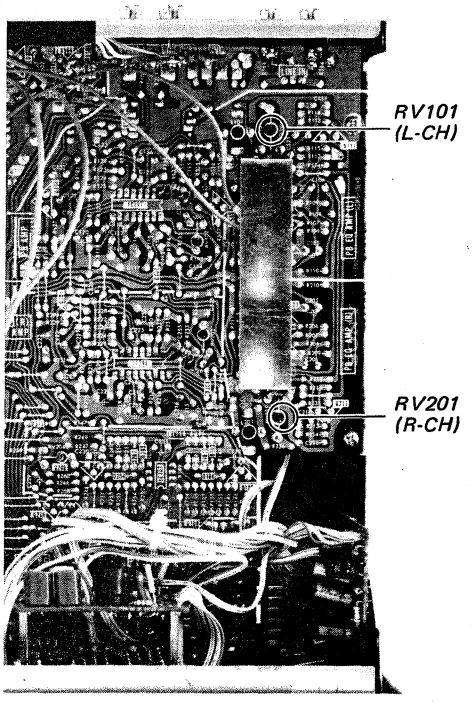
LINE OUT level: 0.52 – 0.59 V
(−3.5 to −2.5 dB)

Level difference between channels:
less than 0.5 dB

Check that LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location:

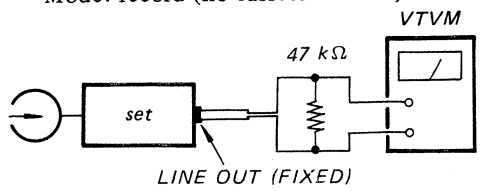
– record/playback board –



Bias Trap Adjustment

Procedure:

Mode: record (no-cassette loaded)

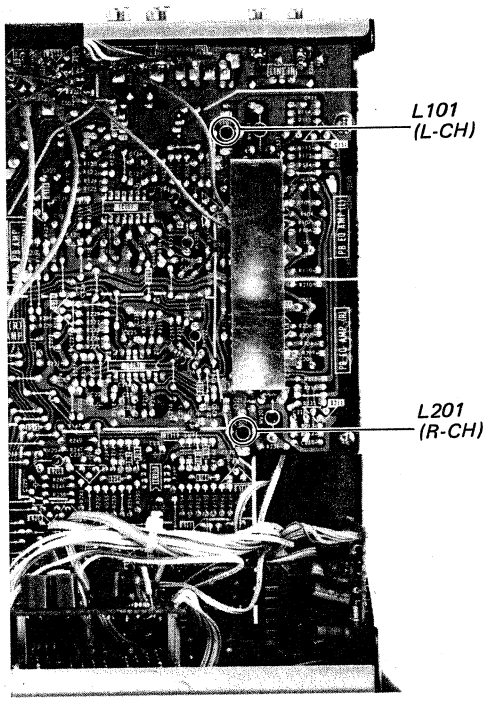


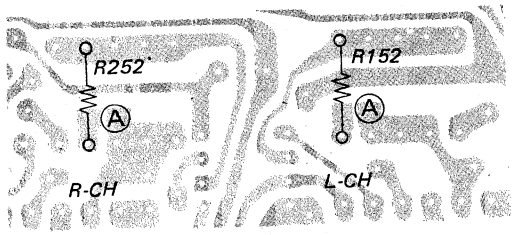
Specification:

LINE OUT level: less than 2.5 mV
(less than −50 dB)

Adjustment Location:

– record/playback board –





LED Peak Program Meter Calibration

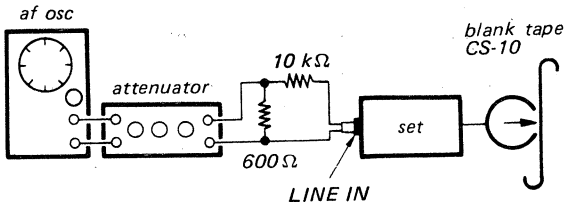
Setting:

REC LEVEL control: standard record
(See page 13.)

MONITOR switch: SOURCE

Procedure:

Mode: record



Slowly turn RV104 (L-CH) and RV204 (R-CH) and stop them just when the segments (◨◧ −2 dB) go out.

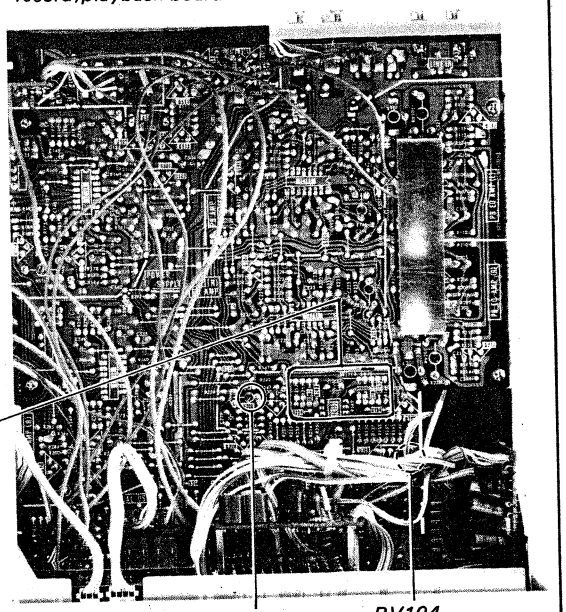
Specification:

LINE IN level	Indication
0.85 – 1.1 V (+1 to +3 dB)	The first segment from the right lights.
2.7 – 5.5 mV (−49 to −43 dB)	The second segment from the left goes out.

If the second segment from the left does not go out when the 2.7 mV (−49 db) LINE IN signal is applied, solder (A).

Adjustment Location:

– record/playback board –



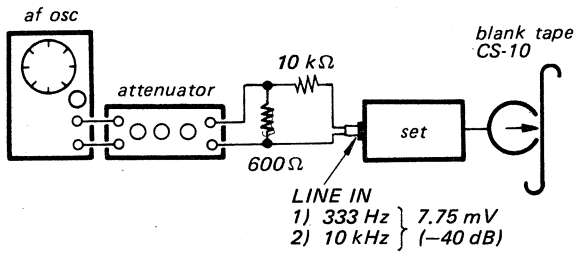
Record Bias Adjustment

Setting:

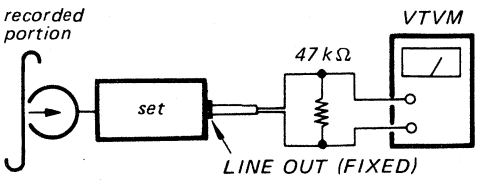
REC LEVEL control: standard record
(See page 13.)

Procedure:

1. Mode: record



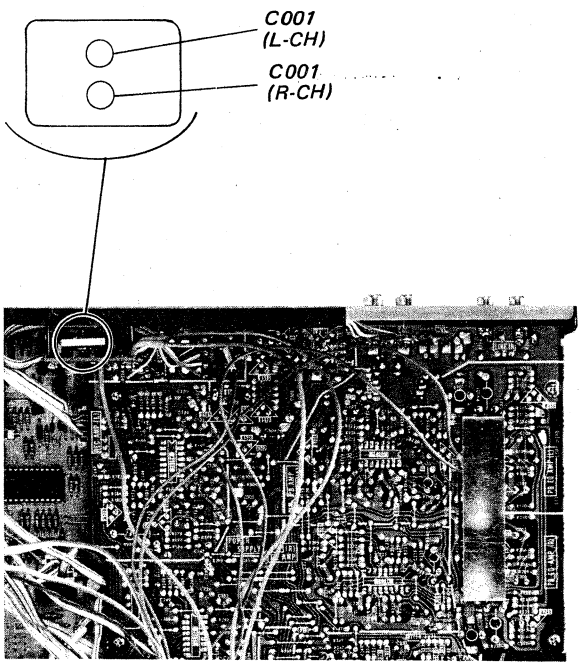
2. Mode: playback



Adjust C001 (L-CH) and C011 (R-CH) so that the 333 Hz and the 10 kHz signal levels become the same.

Adjustment Location:

– bias trimmer board –



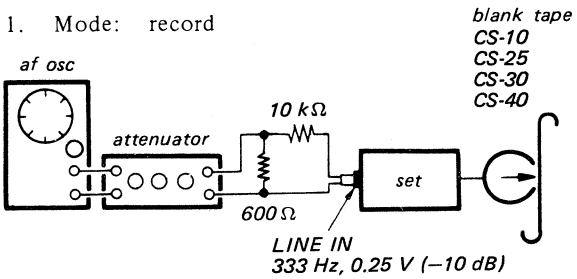
Record Level Adjustment

Setting:

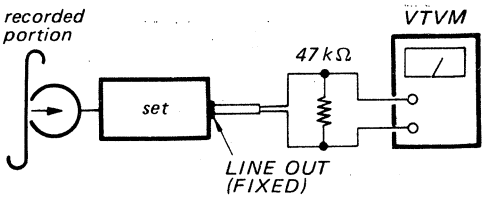
REC LEVEL control: standard record
(See page 13.)

Procedure:

1. Mode: record



2. Mode: playback

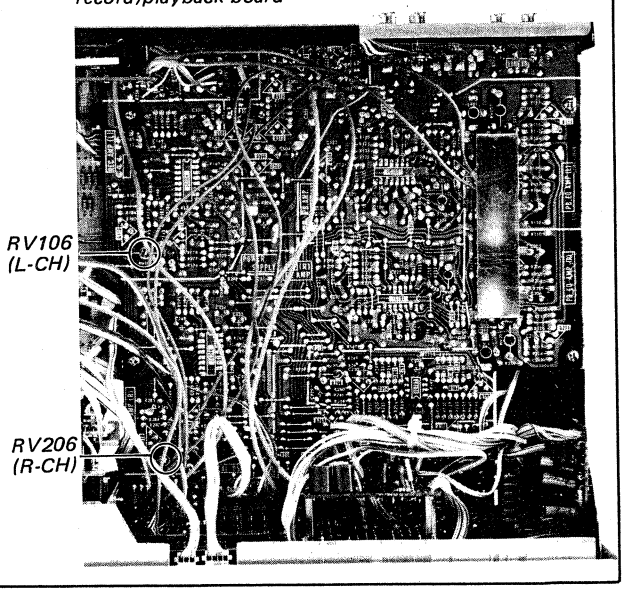


Specification:

Tape	LINE OUT level
CS-10	0.41 – 0.46 V (–5.5 to –4.5 dB)
CS-25 CS-30 CS-40	0.37 – 0.46 V (–6.5 to –4.5 dB)

Adjustment Location:

– record/playback board –



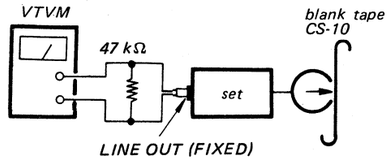
REC LEVEL CAL (calibration) Adjustment

Setting:

CALIBRATION switch: REC LEVEL

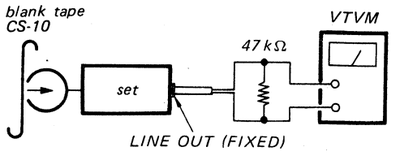
Procedure:

1. Unsolder the hatched portion in Fig. 3 before starting the adjustment.
2. Mode: record
   MONITOR switch: SOURCE



Confirm that the LINE OUT level is 43–45 mV (–25.2 to –24.8 dB).

3. Mode: record and simultaneous playback
   MONITOR switch: TAPE



Confirm that the LINE OUT level is 42–47 mV (–25.5 to –24.5 dB).

4. Slowly turn RV102 (L-CH) and RV202 (R-CH) and stop them just when the second RED segments go out.

5. Confirm that the LINE OUT levels vary between 29–66 mV (–28.5 to –21.5 dB) according to the REC LEVEL CAL controls turning.

Adjustment Location

– record/playback board –

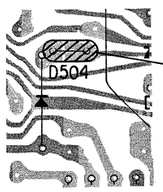


Fig. 3

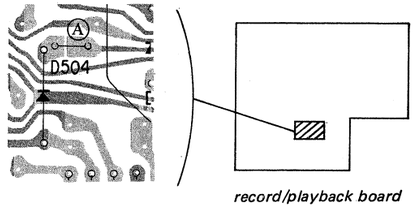
BIAS CAL (calibration) Measurement

Setting:

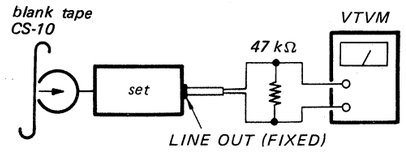
CALIBRATION switch: BIAS

Procedure:

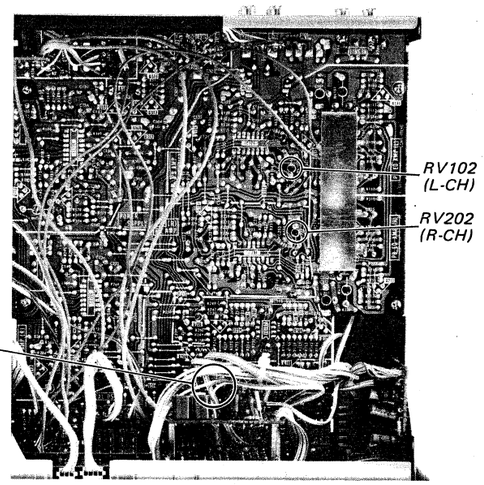
1. Unsolder part Ⓐ before starting the adjustment.



2. Mode: record and simultaneous playback
   MONITOR switch: TAPE



3. Confirm that the LINE OUT level is 26–37 mV (–29.5 to –27.5 dB).
4. Confirm that the LED peak program meter indicates approx. 0 dB, and the LINE OUT levels vary between 18–42mV (–32.5 to –25.5 dB) according to the REC LEVEL CAL controls turning.



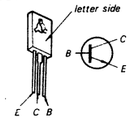
〔MEMO〕

〔MEMO〕

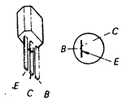
SECTION 4
DIAGRAMS

- **Replacement Semiconductors**
  For replacement, use semiconductors except in ( ).

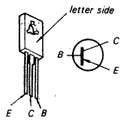
Q801: 2SD809
Q807: 2SD414



Q802, 808: 2SA1027R (2SA1015)

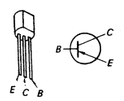


Q803, 805, 822: 2SB548

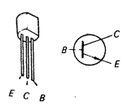


Q804, 806, 809, 817–819, 821, 823 } : 2SC1364 (2SC1815)

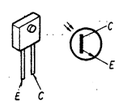
Q810: 2SA684 (2SA773)



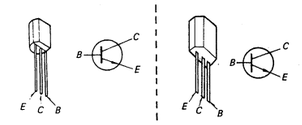
Q811, 812 : 2SC1475



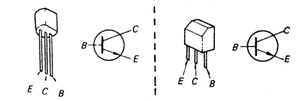
Q820: PH103



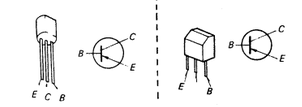
Q1001, 1002: 2SC1364 (2SC634A)



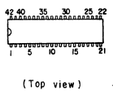
Q1003, 1005: 2SC1475 (2SD471)



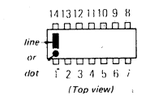
Q1004, 1006: 2SA684 (2SB564)



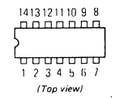
IC801: μPD547C-042



IC802, 803: MSM4069

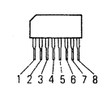


IC805: μPC339C



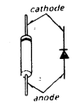
IC806: μPC4558C
IC1002: μPC4558C (μPC4558)

IC1001: CX069

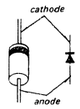


D801–805, 806–809, 814, 821 } : 10E2

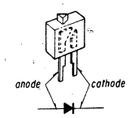
D812, 813, 815, 817, 828–833 } : 1S1555



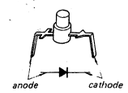
D810, 811: HZ11B2L
D816, 818: HZ12A3L (HZ12A2L)
D819: HZ12B2L (HZ12B1L)
D1001: HZ6B2L (HZ6B1L)



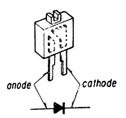
D824: SEL1331G



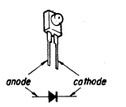
D825: SEL1112R



D826: SEL1741Y



D827: SR110



4-1. SCHEMATIC DIAGRAM — System Control Section —

Refer to page 19 for replacement semiconductors and page 25 for voltages and waveforms at the terminals of IC801.

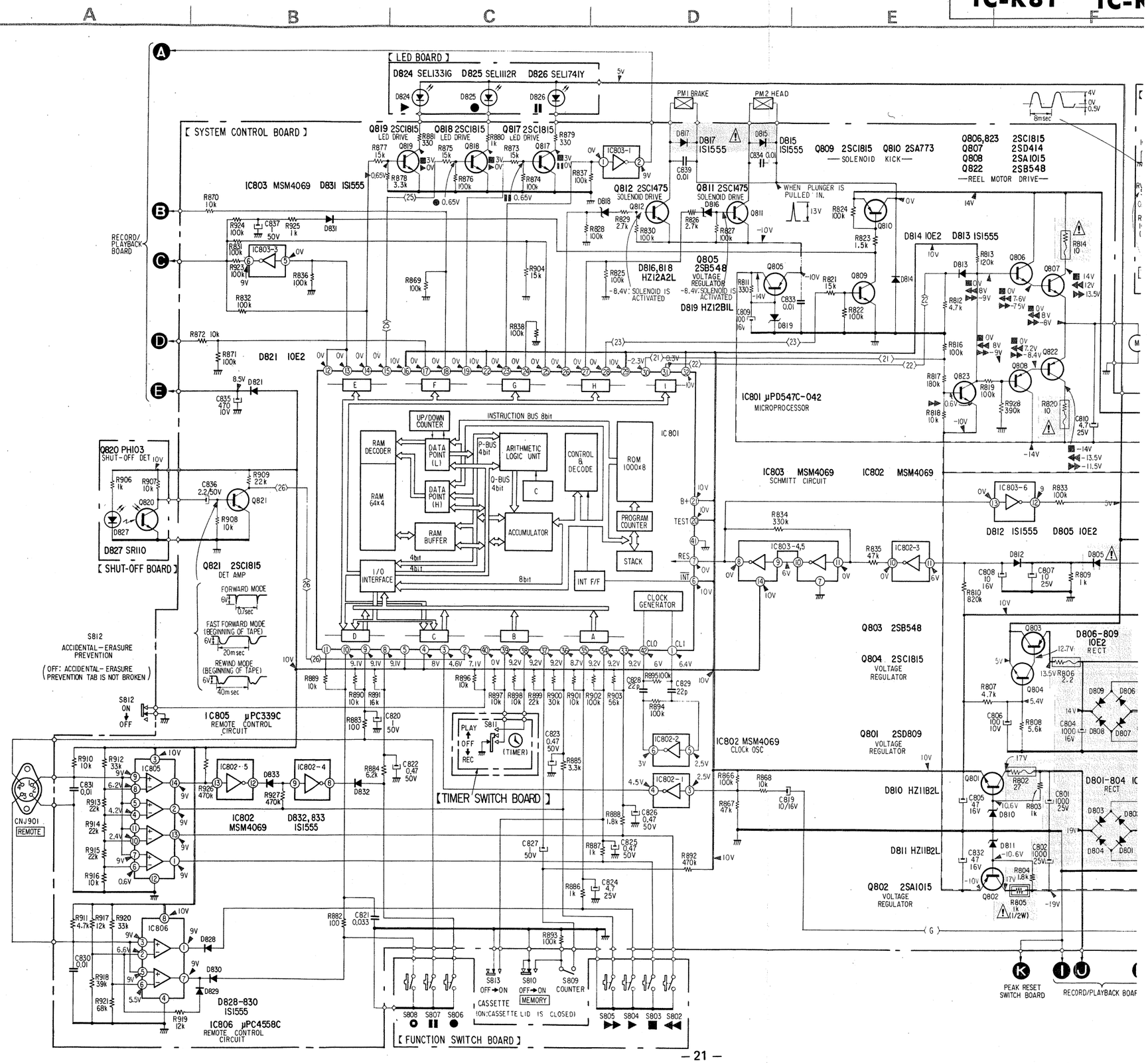
Note:

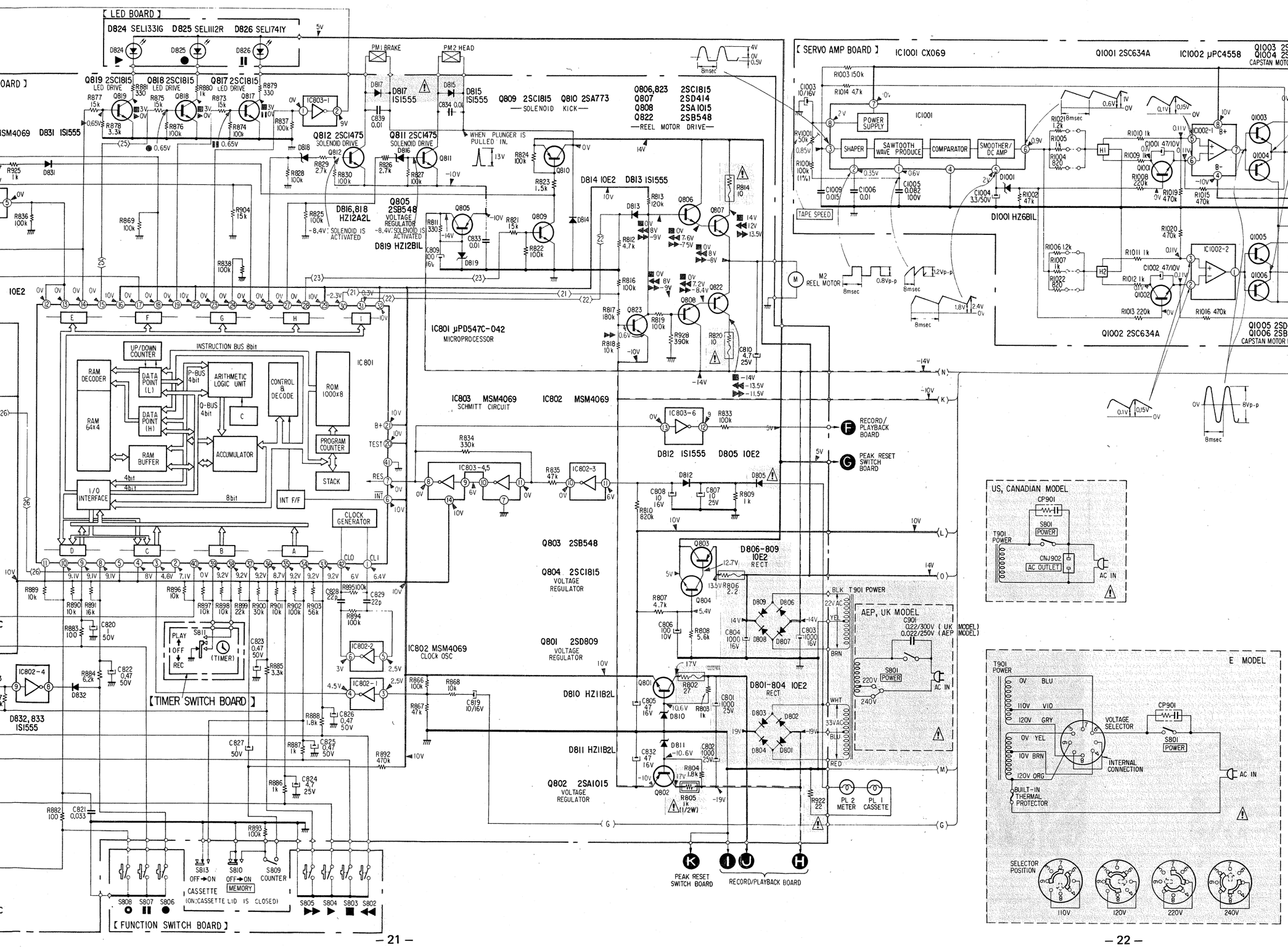
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, 1/4W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ
- : fusible resistor
- : nonflammable resistor.
- 1% indicates component tolerance.
- ——— : B+ bus.
- — — — : B— bus.
- : panel designation.
- : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a VOM (20 kΩ/V).
  no mark: STOP
  - ▶ : FORWARD
  - ▶▶ : FAST FORWARD
  - ◀◀ : REWIND
  - ● : RECORD
  - ⊙ : REC MUTE
  - ❚❚ : PAUSE
  - ■ : STOP
- Voltage variations may be noted due to normal production tolerances.
- Switch

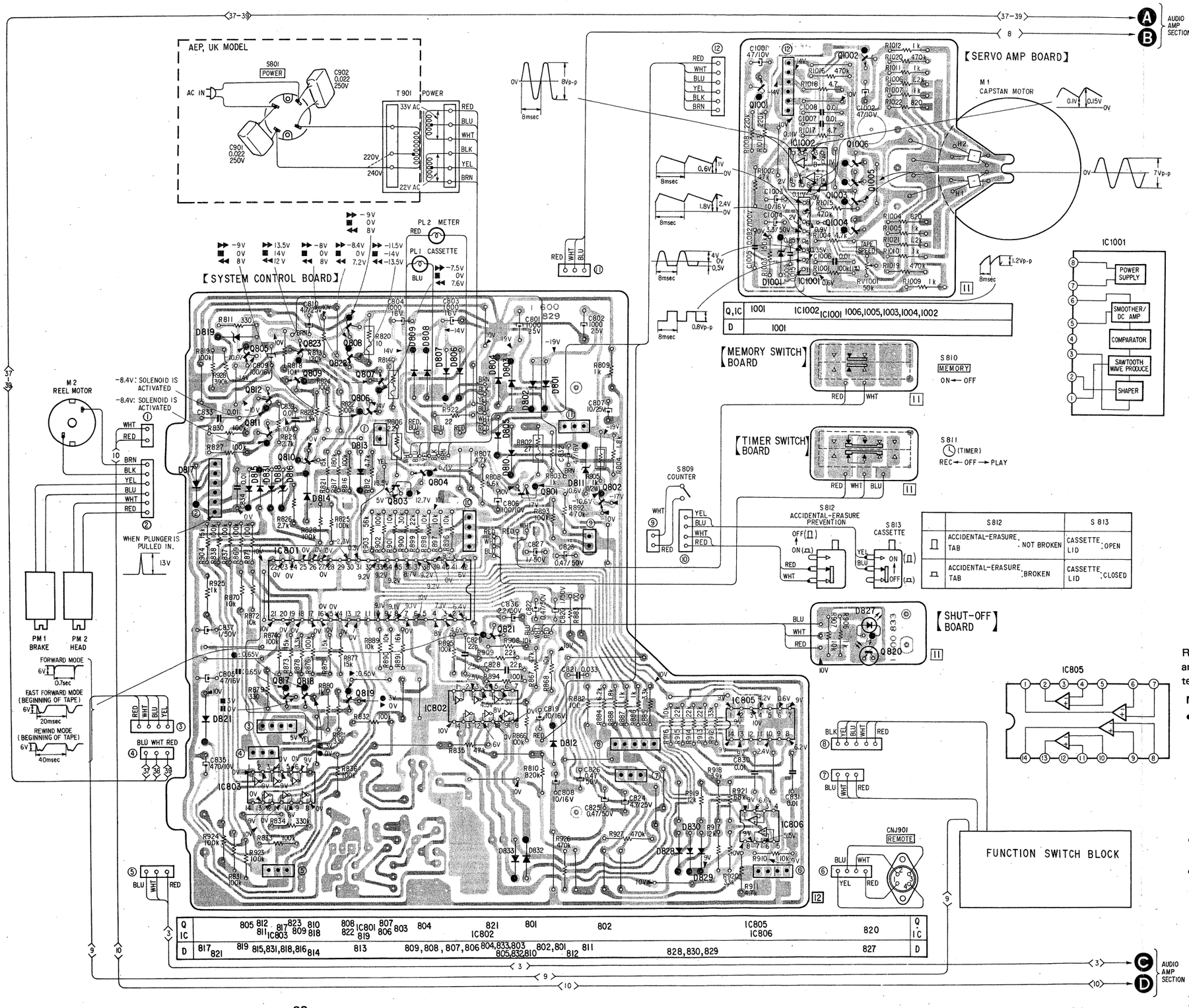
Ref. No.	Switch	Position
S801	POWER	OFF
S802	REWIND	OFF
S803	STOP	OFF
S804	FORWARD	OFF
S805	FAST FORWARD	OFF
S806	RECORD	OFF
S807	PAUSE	OFF
S808	REC MUTE	OFF
S812	ACCIDENTAL-ERASURE PREVENTION	ON
S813	CASSETTE	OFF

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



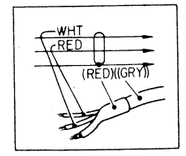

[LED BOARD]
D824 SELI33IG D825 SELIII2R D826 SELI74IY
Q819 2SC1815 LED DRIVE
Q818 2SC1815 LED DRIVE
Q817 2SC1815 LED DRIVE
Q812 2SC1475 SOLENOID DRIVE
Q811 2SC1475 SOLENOID DRIVE
D816,818 HZI2A2L
Q805 2SB548 VOLTAGE REGULATOR
-8.4V: SOLENOID IS ACTIVATED
D819 HZI2BIL
PM1 BRAKE
PM2 HEAD
D817 D815 ISI555
Q809 2SC1815 Q810 2SA773 — SOLENOID KICK —
Q806,823 2SC1815
Q807 2SD414
Q808 2SA1015
Q822 2SB548
— REEL MOTOR DRIVE —
WHEN PLUNGER IS PULLED IN.
D814 I0E2 D813 ISI555
IC801 μPD547C-042
MICROPROCESSOR
INSTRUCTION BUS 8bit
UP/DOWN COUNTER
RAM DECODER
RAM 64x4
DATA POINT (L)
DATA POINT (H)
P-BUS 4bit
Q-BUS 4bit
ARITHMETIC LOGIC UNIT
CONTROL & DECODE
ROM 1000x8
PROGRAM COUNTER
STACK
RAM BUFFER
ACCUMULATOR
I/O INTERFACE
INT F/F
CLOCK GENERATOR
IC801
IC803 MSM4069 SCHMITT CIRCUIT
IC802 MSM4069
IC803-6
IC803-4,5
IC802-3
D812 ISI555 D805 I0E2
Q803 2SB548
Q804 2SC1815 VOLTAGE REGULATOR
D806-809 I0E2 RECT
IC802 MSM4069 CLOCK OSC
IC802-2
IC802-4
IC802-1
Q801 2SD809 VOLTAGE REGULATOR
D801-804 I0E2 RECT
D810 HZ11B2L
D811 HZ11B2L
Q802 2SA1015 VOLTAGE REGULATOR
D832,833 ISI555
D832
[TIMER SWITCH BOARD]
PLAY OFF REC (TIMER) SB11
[FUNCTION SWITCH BOARD]
SB13 OFF→ON
SB10 OFF→ON MEMORY
SB09 COUNTER
CASSETTE (ON:CASSETTE LID IS CLOSED)
S808 S807 S806 S805 S804 S803 S802
PEAK RESET SWITCH BOARD
RECORD/PLAYBACK BOARD
RECORD/ PLAYBACK BOARD
PEAK RESET SWITCH BOARD
PL 2 METER
PL 1 CASSETTE
[SERVO AMP BOARD]
IC1001 CX069
Q1001 2SC634A
IC1002 μPC4558
Q1003 2SD471
Q1004 2SB564
CAPSTAN MOTOR DRIVE
POWER SUPPLY
SHAPER
SAWTOOTH WAVE PRODUCE
COMPARATOR
SMOOTHER/ DC AMP
TAPE SPEED
D1001 HZ6BIL
M2 REEL MOTOR
Q1002 2SC634A
Q1005 2SD471
Q1006 2SB564
CAPSTAN MOTOR DRIVE
M1 CAPSTAN MOTOR
US, CANADIAN MODEL
CP901
S801 POWER
T901 POWER
CNJ902 AC OUTLET
AC IN
AEP, UK MODEL
C901 0.22/300V (UK MODEL) 0.022/250V (AEP MODEL)
E MODEL
VOLTAGE SELECTOR
INTERNAL CONNECTION
BUILT-IN THERMAL PROTECTOR
SELECTOR POSITION
110V 120V 220V 240V



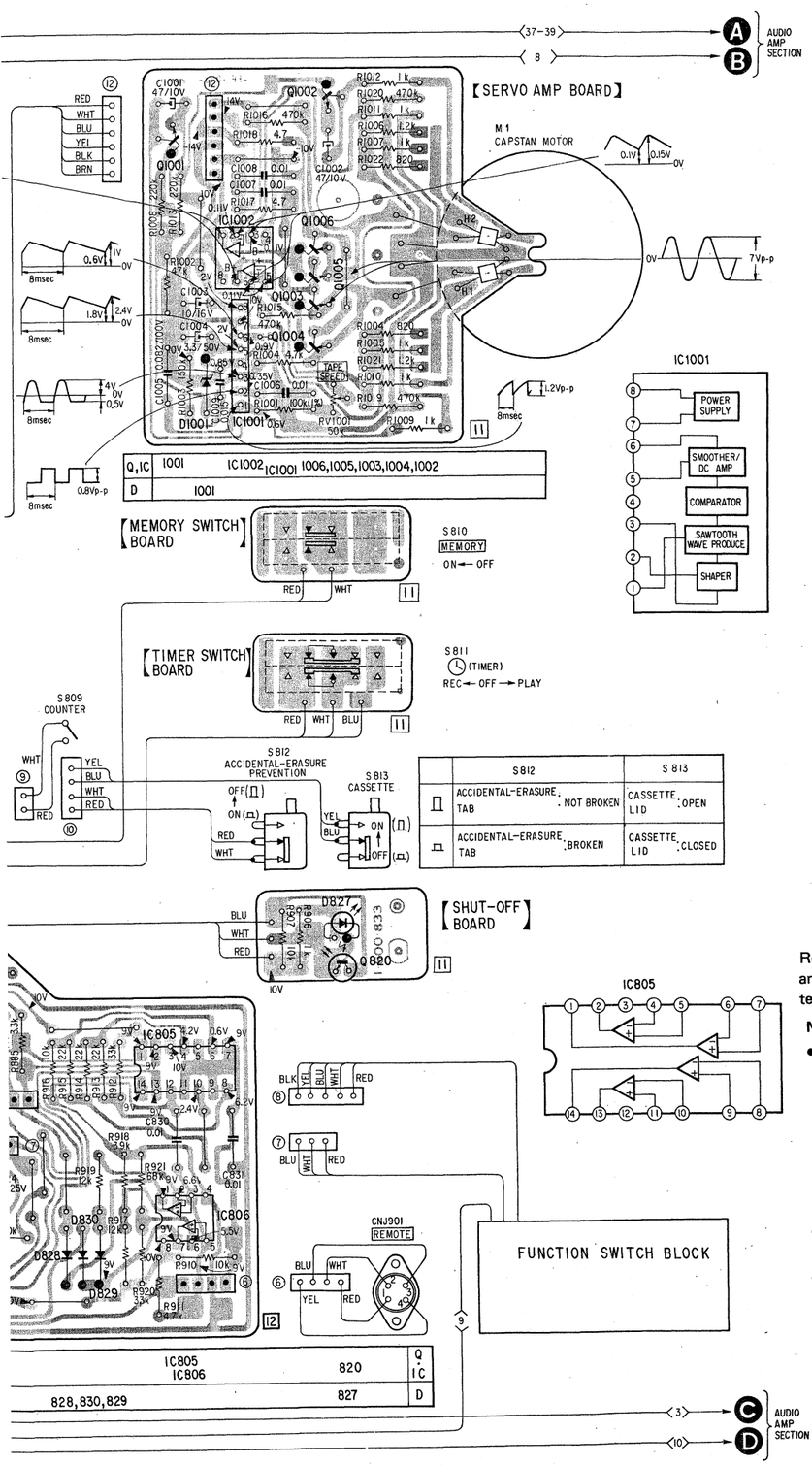
Refer to page 19 for replacement semiconductors and page 25 for voltages and waveforms at the terminal of IC801.

Note:

- Color code of sleeving over the end of the jacket.



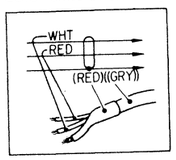
- : B+ pattern.
- : B – pattern
- no mark: STOP
  - ▶ : FORWARD
  - ▶▶ : FAST FORWARD
  - ◀◀ : REWIND
  - ● : RECORD
  - ○ : REC MUTE
  - ▮▮ : PAUSE
  - ■ : STOP



Refer to page 19 for replacement semiconductors and page 25 for voltages and waveforms at the terminal of IC801.

Note:

- Color code of sleeving over the end of the jacket.

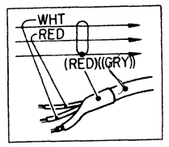


- : B+ pattern.
- : B − pattern
- no mark: STOP
  - ▶ : FORWARD
  - ▶▶ : FAST FORWARD
  - ◀◀ : REWIND
  - ● : RECORD
  - ○ : REC MUTE
  - ▮▮ : PAUSE
  - ■ : STOP

Voltages and Waveforms at the Terminals of IC801.

Terminal No.	Waveform or Voltage	Terminal No.	Waveform or Voltage	Terminal No.	Waveform or Voltage
①	10V P-P, 4 µsec	⑭	Forward Mode: 10V / 0V	㉙	10 Vdc
②	• Forward Mode: 10V P-P, 0.7 sec • Fast Forward Mode: 10V P-P, 20 msec • When pause botton is pushed in forward mode: 10 Vdc • Tape End: 10 Vdc	⑮	Record Mode: 10V / 0V	㉚	Fast Forward Mode: 10V / 0V, −2.2V, 0.3 sec. Fast Forward button is pushed.
		⑯	10 Vdc	㉛	Rewind Mode: 10V / 0V, 0.3 sec Rewind button is pushed.
		⑰	Forward Mode: 10V / 0V, 0.5 sec Forward button is pushed.	㉜	10 Vdc
③	8V P-P, 8 msec	⑱	Record/Forward Mode: 10V / 0V	㉝	10V / 0V Rewind button is pushed.
④ to ⑥	10 Vdc	⑲	Pause Mode: 10V / 0V	㉞	10V / 0V Stop button is pushed or the cassette lid is open.
⑦	10V P-P, 2.5 sec S17 (POWER): ON 10V P-P, 0.5 sec S17 (POWER): ON–OFF	⑳ to ㉒	10 Vdc	㉟	10V / 0V Forward button is pushed.
		㉓	10V / 0V Record/Forward button is pushed. Record Muting or Pause button is pushed.	㊱	10V / 0V Fast Forward button is pushed.
⑧	10V / 0V Record button is pushed.	㉔	0 Vdc	㊲	• S810 (MEMORY): ON 10 V / 0 V Tape counter is at 999 in rewind mode.
⑨	10V / 0V Pause button is pushed.	㉕	Forward or Record Mode: 10V / 3.3V / 0V, 0.6 sec Forward or Record button is pushed.	㊳	• S811 (timer): PLAY
⑩	10V / 0V Record button is pushed.	㉖	Fast Forward or Rewind Mode or Record/Forward/Pause Mode: 10V / 0V	㊴	• S811 (timer): REC
⑪	10 Vdc	㉗	Forward Mode: 10V / 0V	㊵	When the accidental erasure prevention tab is broken: 0 V When the accidental erasure prevention tab is not broken: 10 V
⑫ ⑬	Fast Forward or Rewind Mode: 10V / 0V	㉘	0.35 sec., 10V / 0V Forward or Fast Forward or Rewind button is pushed.	㊶	0 Vdc
				㊷	4V P-P, 4 µsec

- Color code of sleeving over the end of the jacket.



- : B + pattern
- : B – pattern
- Signal path
  - : L-CH
  - : R-CH
  - : Common
- no mark: STOP
  - ▶ : FORWARD
  - ▶▶ : FAST FORWARD
  - ◀◀ : REWIND
  - ● : RECORD
  - ○ : REC MUTE
  - ❚❚ : PAUSE
  - ■ : STOP

SYSTEM CONTROL SECTION A B

【BIAS TRIMMER BOARD】

HRP RPF 202-3602A

HE EF206-36

LOW : 14V AC
MED : 16.5V AC
HIGH : 22V AC
METAL : 37.5V AC

【BIAS CAL CONTROL BOARD】

BIAS CAL

LED REAK PROGRAM METER

【METER BOARD】

【PEAK RESET SWITCH BOARD】

S107 PEAK HOLD RESET

S107-1 MANUAL

S107-2 AUTO

Q, IC	D
509	503
510,504	
501,502	
503	
511	501
111	
508	
512	
505	
507	
506	
104	106
IC101	502
515	
103	
IC104	
102	
101	
110	101
109	
204	
201	
202	
203	
IC201	
	201
211	
IC204	206
	513
	202,203
	102,103
206	
IC103	204,104
106	
209	
208,207	
205,108	
210,105	
107	512
	205
	505,504
	509
	105
	507
516	
IC102	506,510
514	508
518	
IC501	
513	

Q, IC	
602	
601	
604	
603	
606	
605	
IC601	

【RECORD/PLAYBACK BOARD】

LINE OUT FIXED

LINE IN

PLAYBACK LEVEL (L)

PLAYBACK LEVEL (R)

RECORD LEVEL CAL (L)

RECORD LEVEL CAL (R)

RECORD LEVEL (L)

RECORD LEVEL (R)

LED PEAK PROGRAM METER (R)

LED PEAK PROGRAM METER (L)

DOLBY ON:0V
DOLBY OFF:-3V

TYPE I:0V
TYPE II-IV:0.6V

S102 CALIBRATION
OFF → BIAS → REC LEVEL

S101 MONITOR SOURCE
TAPE

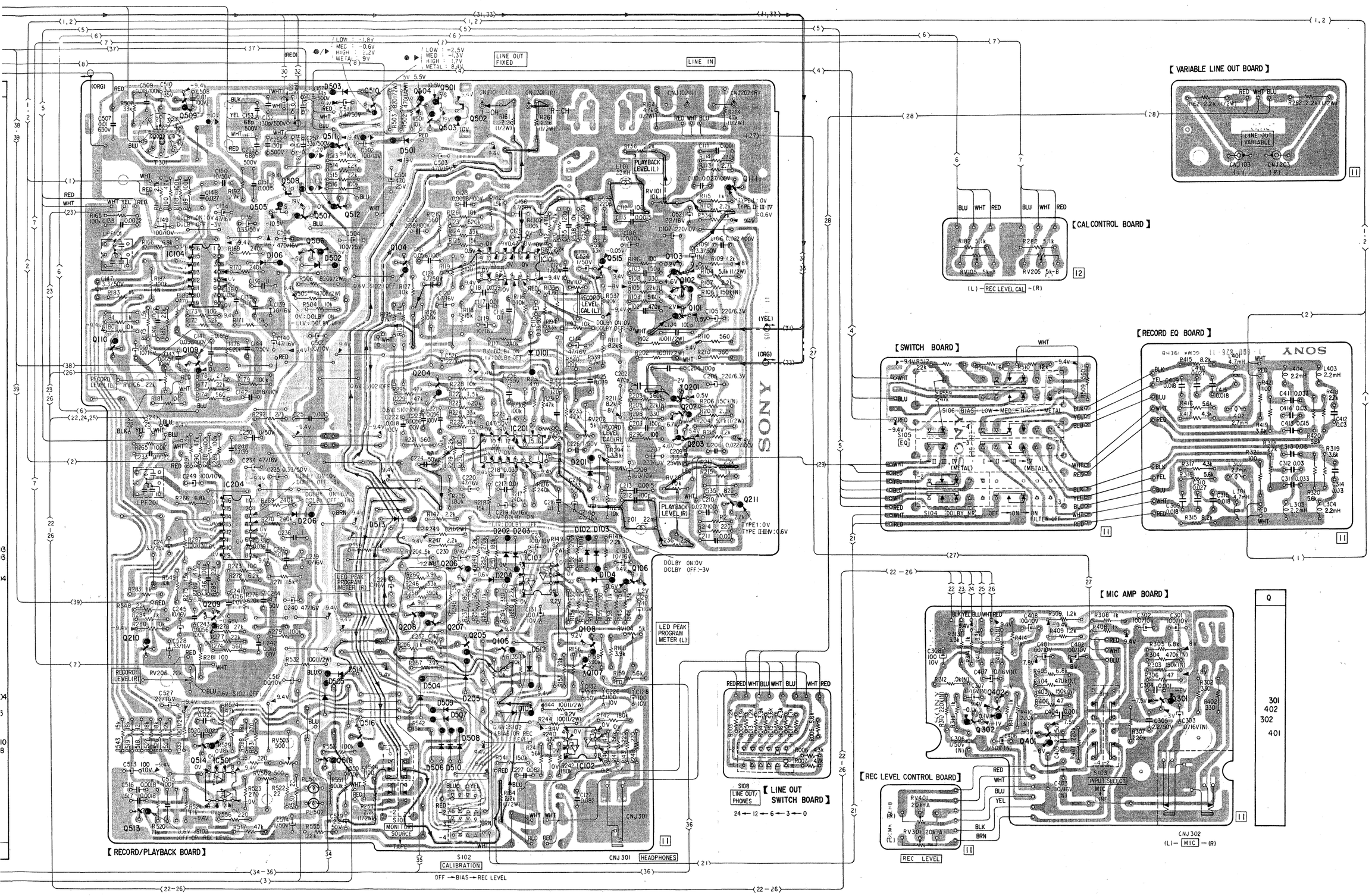
S108 LINE OUT/ PHONES

【LINE SWITC

CNJ301 HEADPHONES

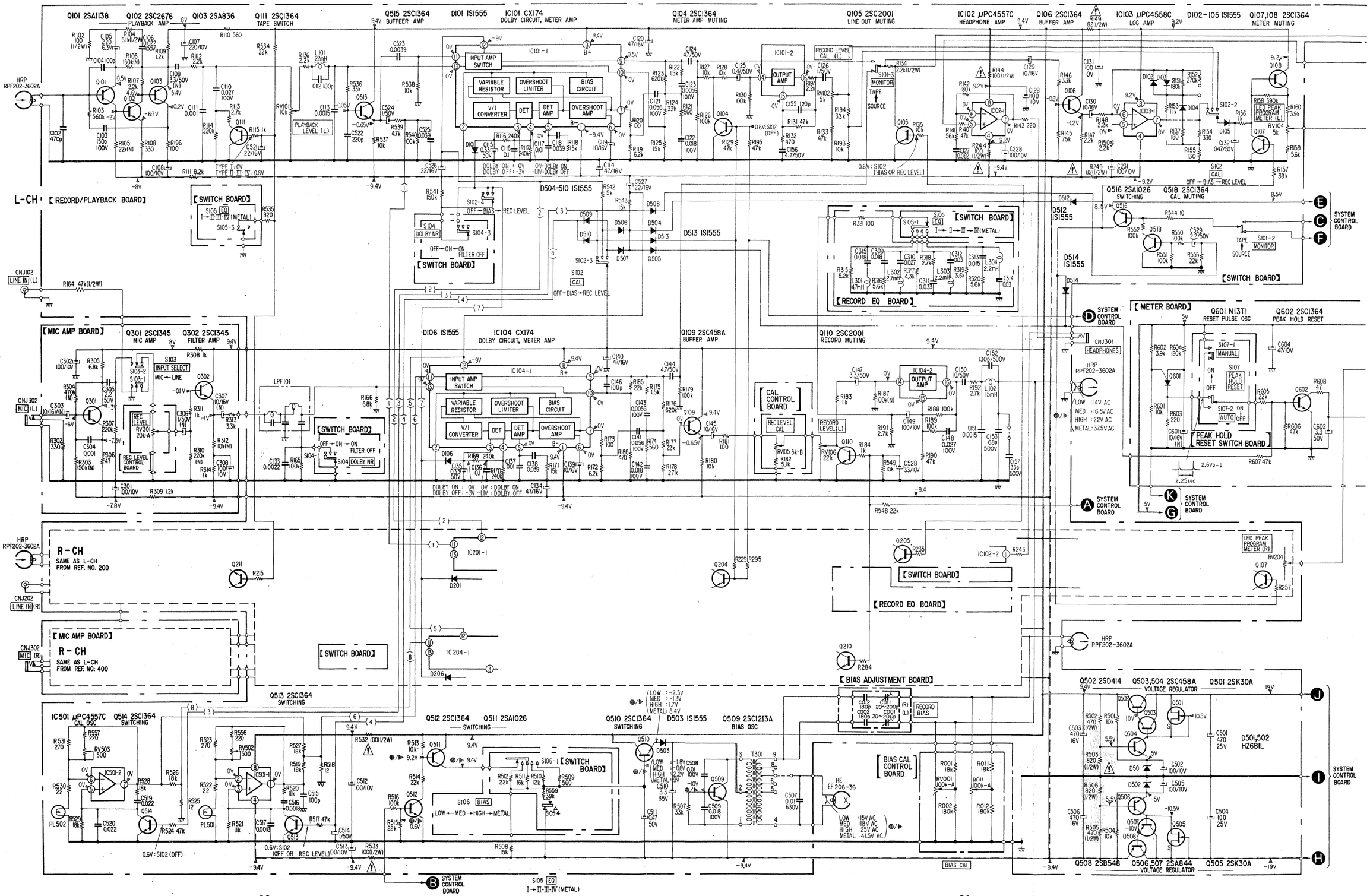
SYSTEM CONTROL SECTION C D

SONY


【RECORD/PLAYBACK BOARD】
【VARIABLE LINE OUT BOARD】
【CAL CONTROL BOARD】
【SWITCH BOARD】
【RECORD EQ BOARD】
【MIC AMP BOARD】
【REC LEVEL CONTROL BOARD】
【LINE OUT SWITCH BOARD】
LINE OUT FIXED
LINE IN
LINE OUT VARIABLE
PLAYBACK LEVEL (L)
PLAYBACK LEVEL (R)
RECORD LEVEL CAL (L)
RECORD LEVEL CAL (R)
RECORD LEVEL (L)
RECORD LEVEL (R)
LED PEAK PROGRAM METER (L)
LED PEAK PROGRAM METER (R)
REC LEVEL CAL (L) – (R)
(L) – REC LEVEL CAL – (R)
S101 MONITOR SOURCE
S102 CALIBRATION
OFF → BIAS → REC LEVEL
S103 INPUT SELECT
MIC
LINE
S104 DOLBY NR
OFF → ON
FILTER OFF
S105 EQ
I II III IV (METAL)
S106 BIAS
LOW – MED – HIGH – METAL
S108 LINE OUT/PHONES
24 ← 12 ← 6 ← 3 ← 0
CNJ 301
HEADPHONES
CNJ 302
(L) – MIC – (R)
REC LEVEL
DOLBY ON:0V
DOLBY OFF:-3V
TYPE I:0V
TYPE II-III-IV:0.6V
SONY
DOLBY

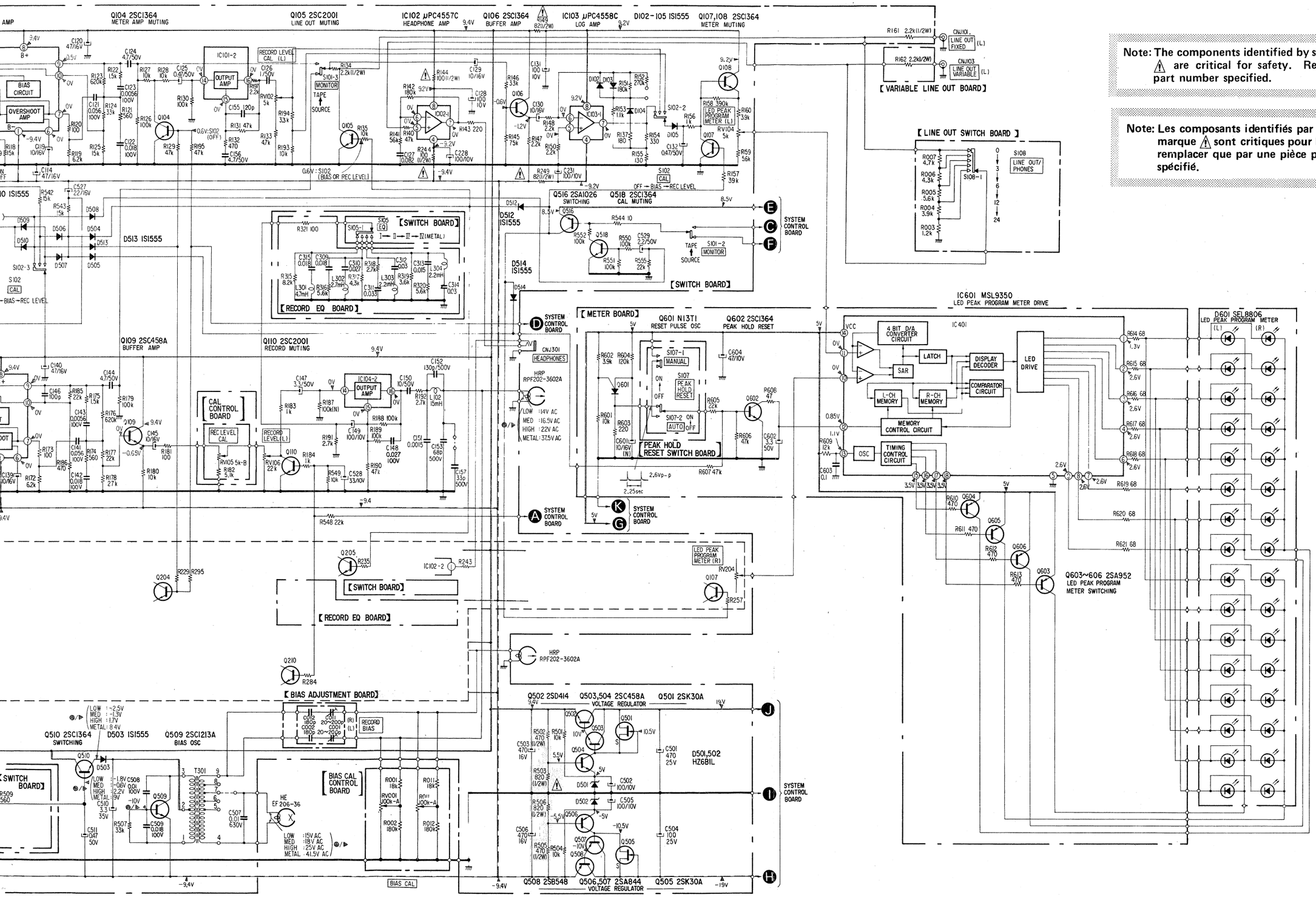
4-4. SCHEMATIC DIAGRAM — Audio Amp Section —

See page 32 for the notes.



Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



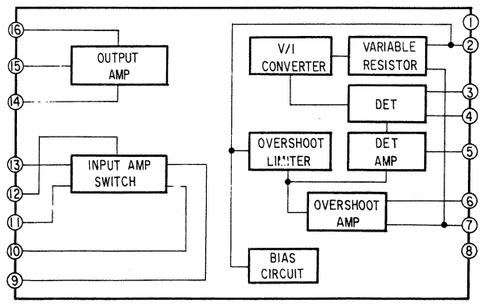
– Audio Amp Section –

Note:

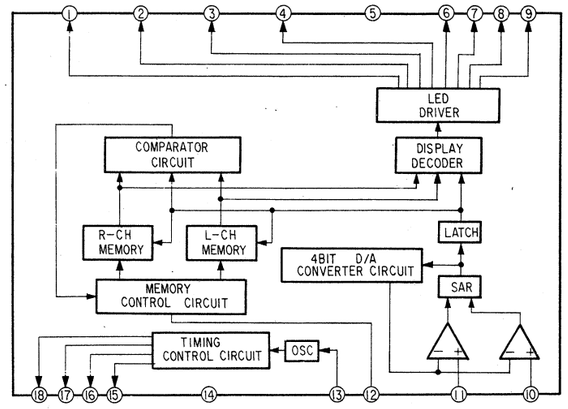
- Components for right channel have same values as for left channel. Reference numbers are coded from 200 and 400.
- All capacitors are in μF unless otherwise noted. pF = μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000 Ω, MΩ = 1000 kΩ
- : fusible resistor.
- (N) : low-noise.
- ——— : B+ bus.
- – – – : B– bus.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 kΩ/V).
  no mark: STOP
  ▶ : FORWARD
  ▶▶ : FAST FORWARD
  ◀◀ : REWIND
  ● : RECORD
  ○ : REC MUTE
  ▮▮ : PAUSE
  ■ : STOP
- AC voltage readings in the bias oscillator circuit are taken with a VTVM.
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S101-1 to 101-4	MONITOR	TAPE
S102-1 to 101-4	CALIBRATION	OFF
S103-1 to 103-4	INPUT SELECT	LINE
S104-1 to 104-3	DOLBY NR	OFF
S105-1 to 105-4	EQ	I
S106-1, 2	BIAS	MED
S107-1	MANUAL	OFF
S107-2	AUTO	ON

IC101, 104, 201, 204



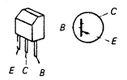
IC601



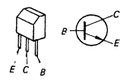
– Audio Amp Section –

- **Replacement Semiconductors**
  For replacement, use semiconductors except in ( ).

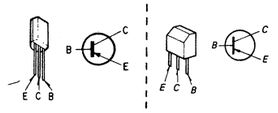
Q101, 201 : 2SA1138



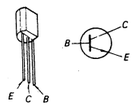
Q102, 202 : 2SC2676



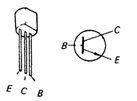
Q103, 203 : 2SA872-E (2SA836)



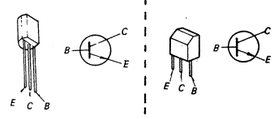
Q104, 204
Q106–108
Q206–208
Q111, 211
510, 512–515
518, 602 : 2SC1364



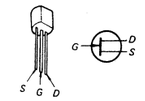
Q105, 205 : 2SC2001
Q110, 210 : 2SC2001
Q301, 401 : 2SC1345
Q302, 402 : 2SC1345



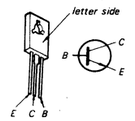
Q109, 209 : 2SC1362
Q503, 504 : 2SC1362 (2SC458A)



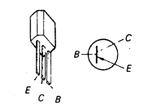
Q501, 505 : 2SK30A



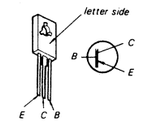
Q502 : 2SD414



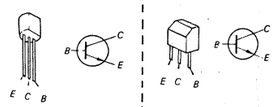
Q506, 507 : 2SA1027R (2SA844)
Q511, 516 : 2SA1027R (2SA1026)



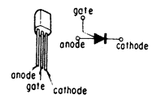
Q508 : 2SB548



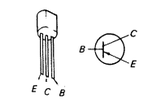
Q509 : 2SC1475 (2SC1213A)



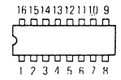
Q601 : N13TI



Q603–606 : 2SA952

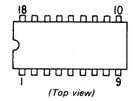


IC101, 201
IC104, 204 : CX174

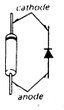


IC102, 202
IC501 : μPC4557C
IC103, 203 : μPC4558C

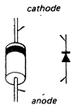
IC601 : MSL9350



D101–106
201–206
503–510
512–514 : 1S1555



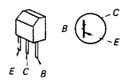
D501, 502 : HZ6B2L (HZ6B1L)



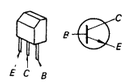
– Audio Amp Section –

- **Replacement Semiconductors**
  For replacement, use semiconductors except in ( ).

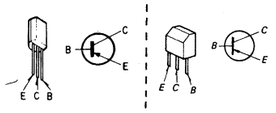
Q101, 201 : 2SA1138



Q102, 202 : 2SC2676

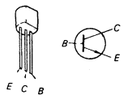


Q103, 203 : 2SA872-E (2SA836)

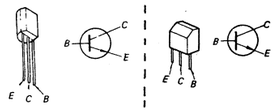


Q104, 204
Q106–108
Q206–208
Q111, 211
510, 512–515
518, 602 : 2SC1364

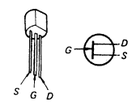
Q105, 205 : 2SC2001
Q110, 210 : 2SC2001
Q301, 401 : 2SC1345
Q302, 402 : 2SC1345



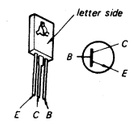
Q109, 209 : 2SC1362
Q503, 504 : 2SC1362 (2SC458A)



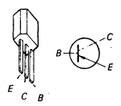
Q501, 505 : 2SK30A



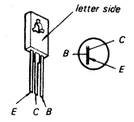
Q502 : 2SD414



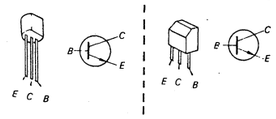
Q506, 507 : 2SA1027R (2SA844)
Q511, 516 : 2SA1027R (2SA1026)



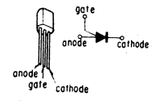
Q508 : 2SB548



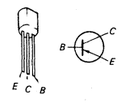
Q509 : 2SC1475 (2SC1213A)



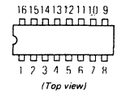
Q601 : N13TI



Q603–606 : 2SA952

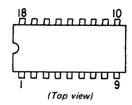


IC101, 201
IC104, 204 : CX174

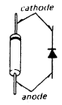


IC102, 202
IC501 : μPC4557C
IC103, 203 : μPC4558C

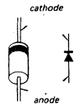
IC601 : MSL9350



D101–106
201–206
503–510
512–514 : 1S1555

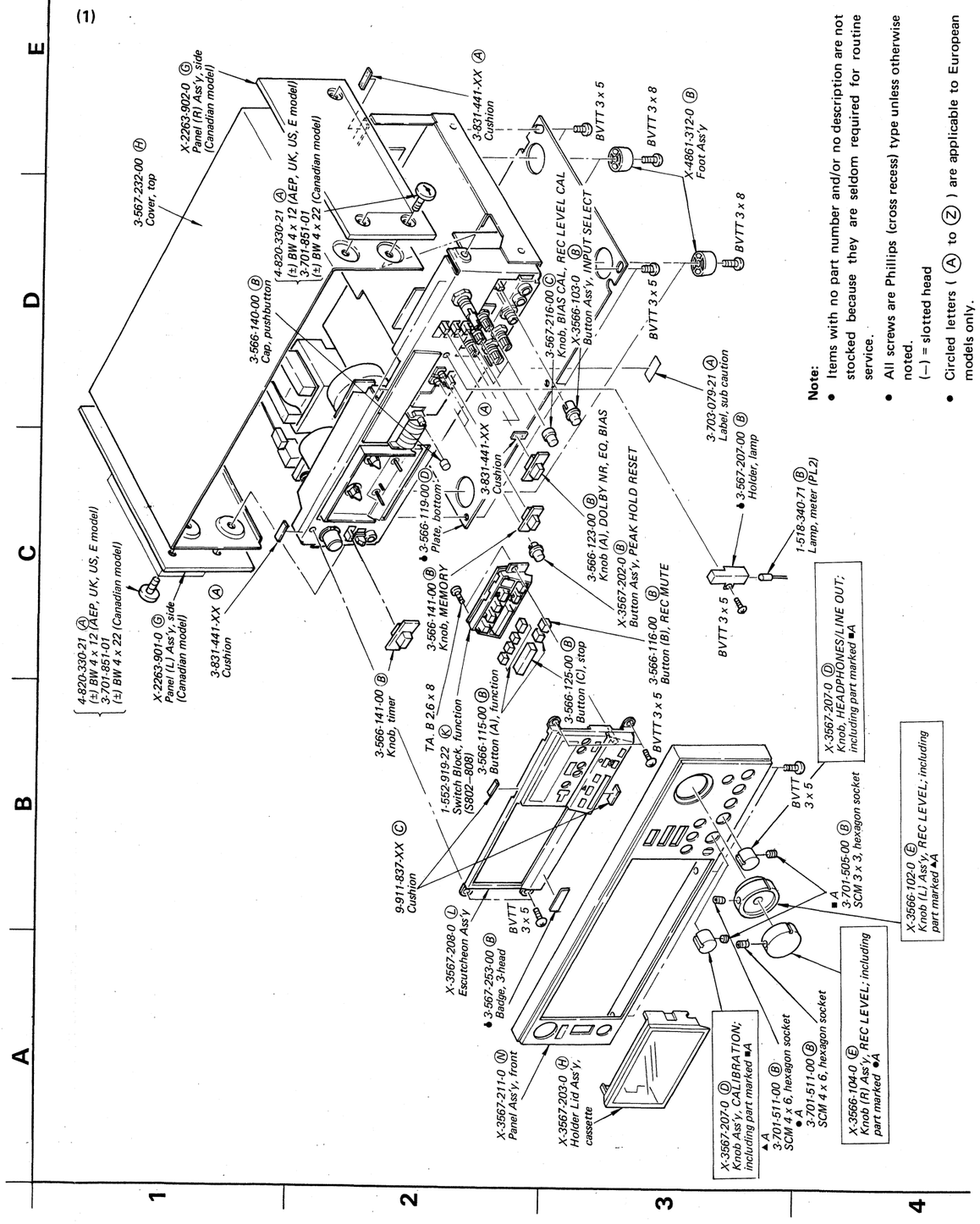


D501, 502 : HZ6B2L (HZ6B1L)



SECTION 5
EXPLODED VIEWS

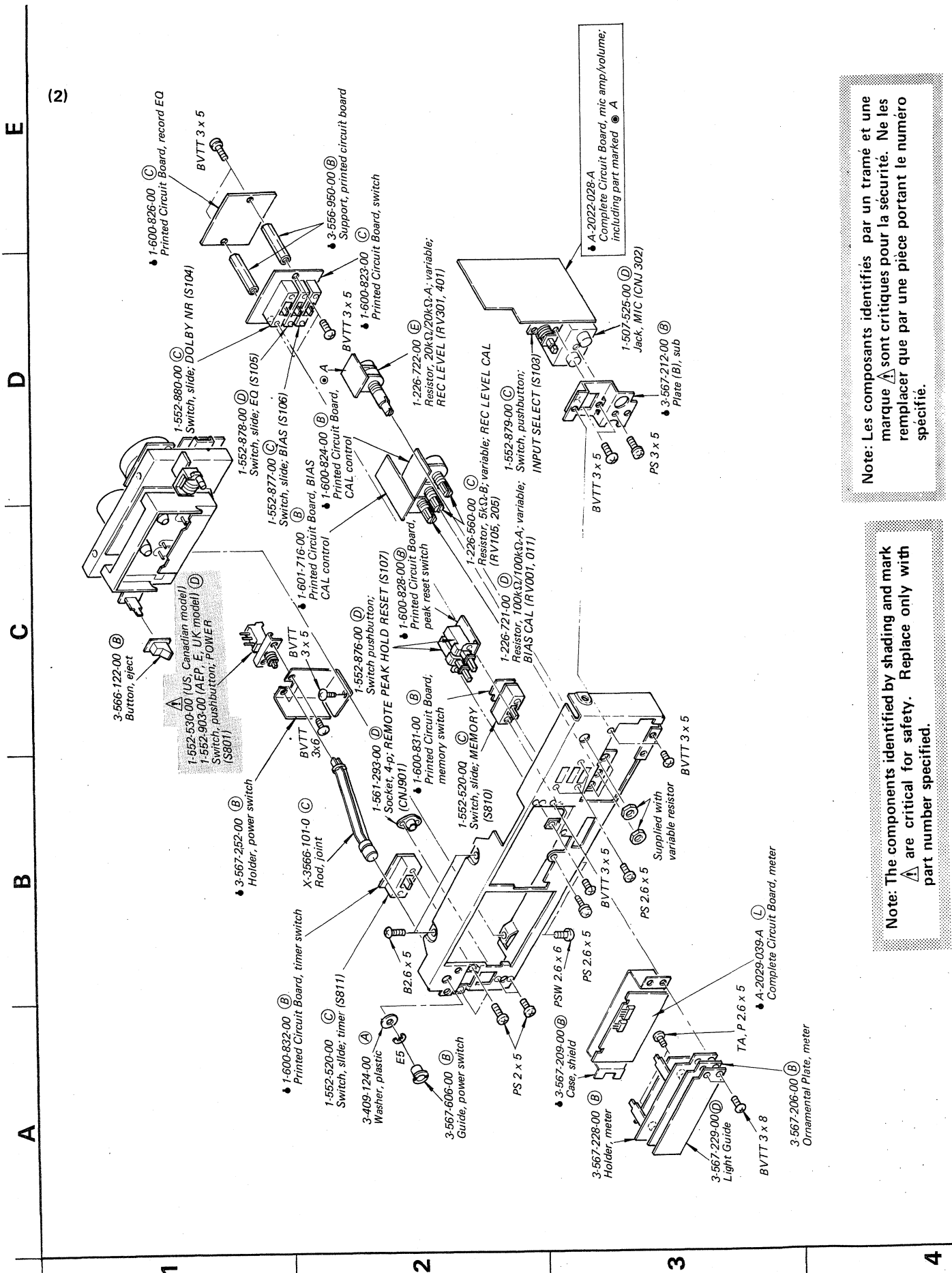
(1)



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

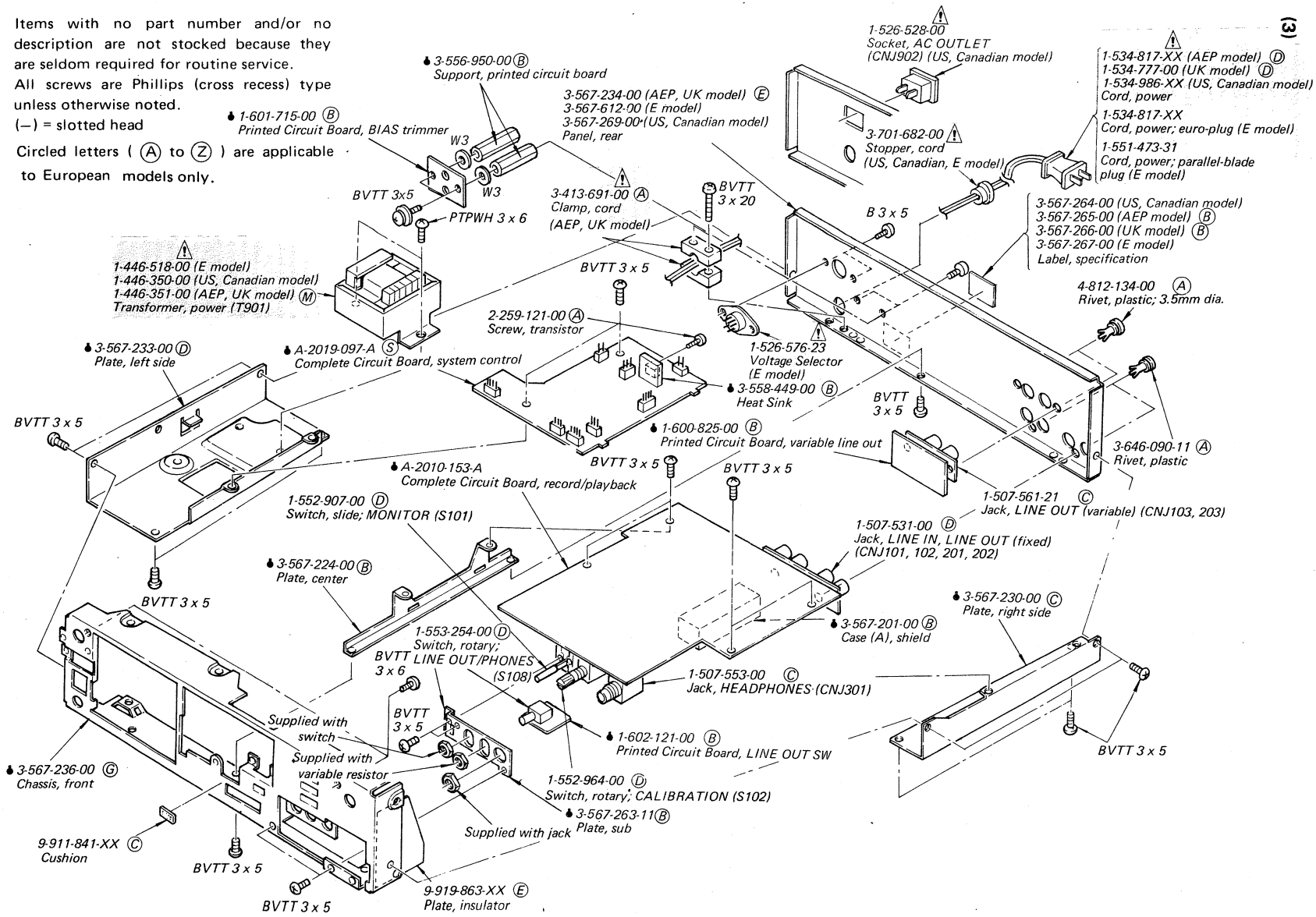
(2)



Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

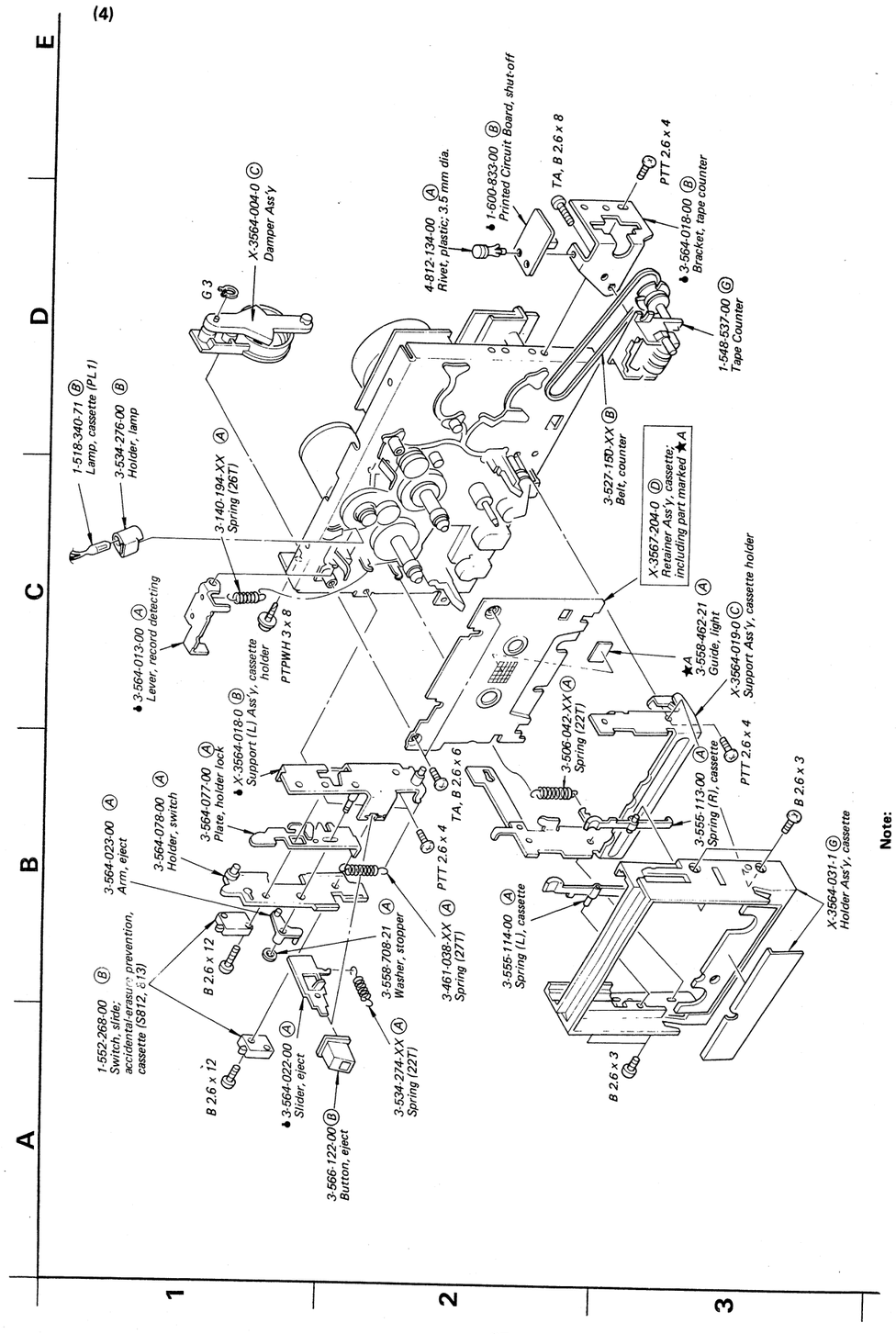
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.



Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

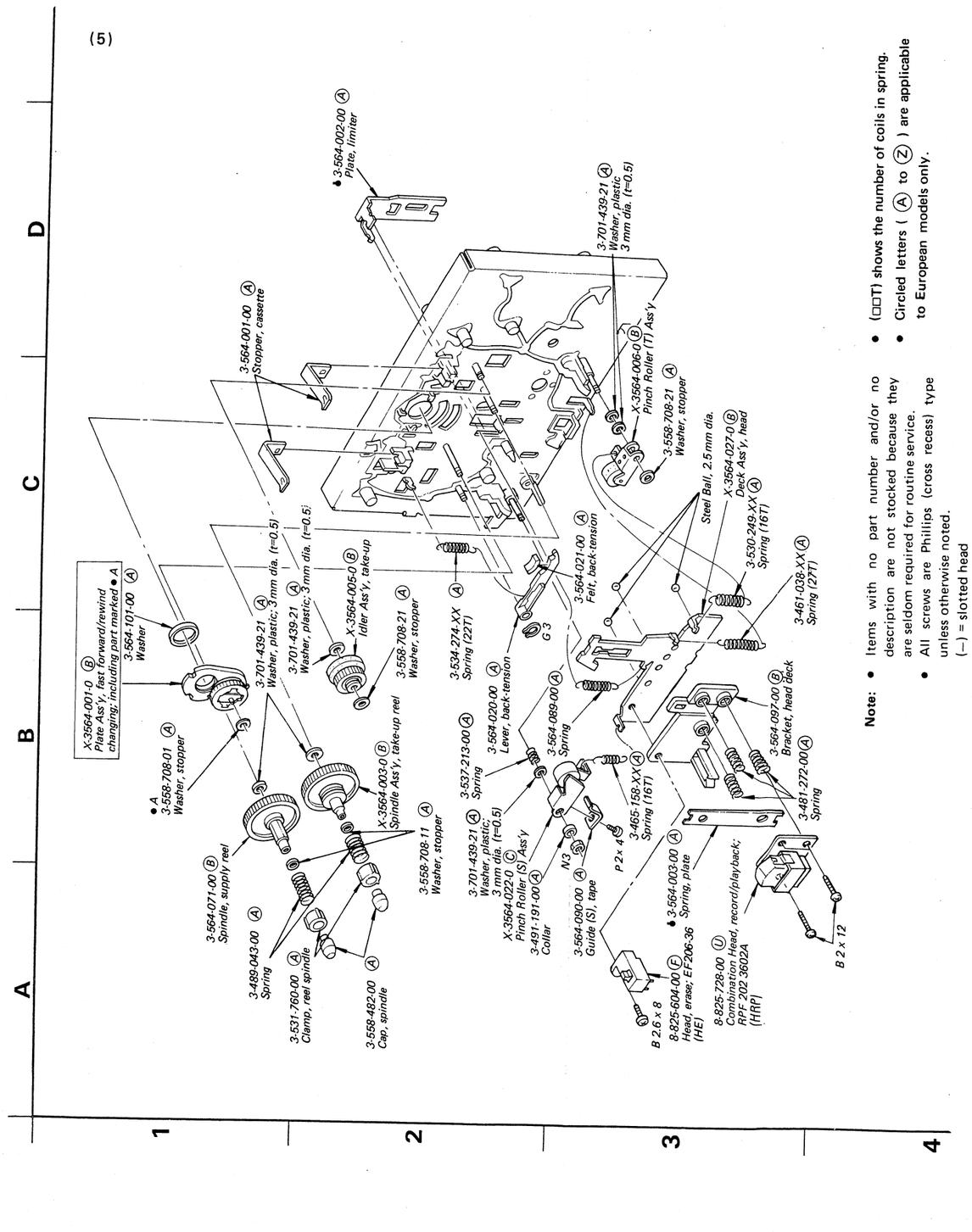
(4)



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

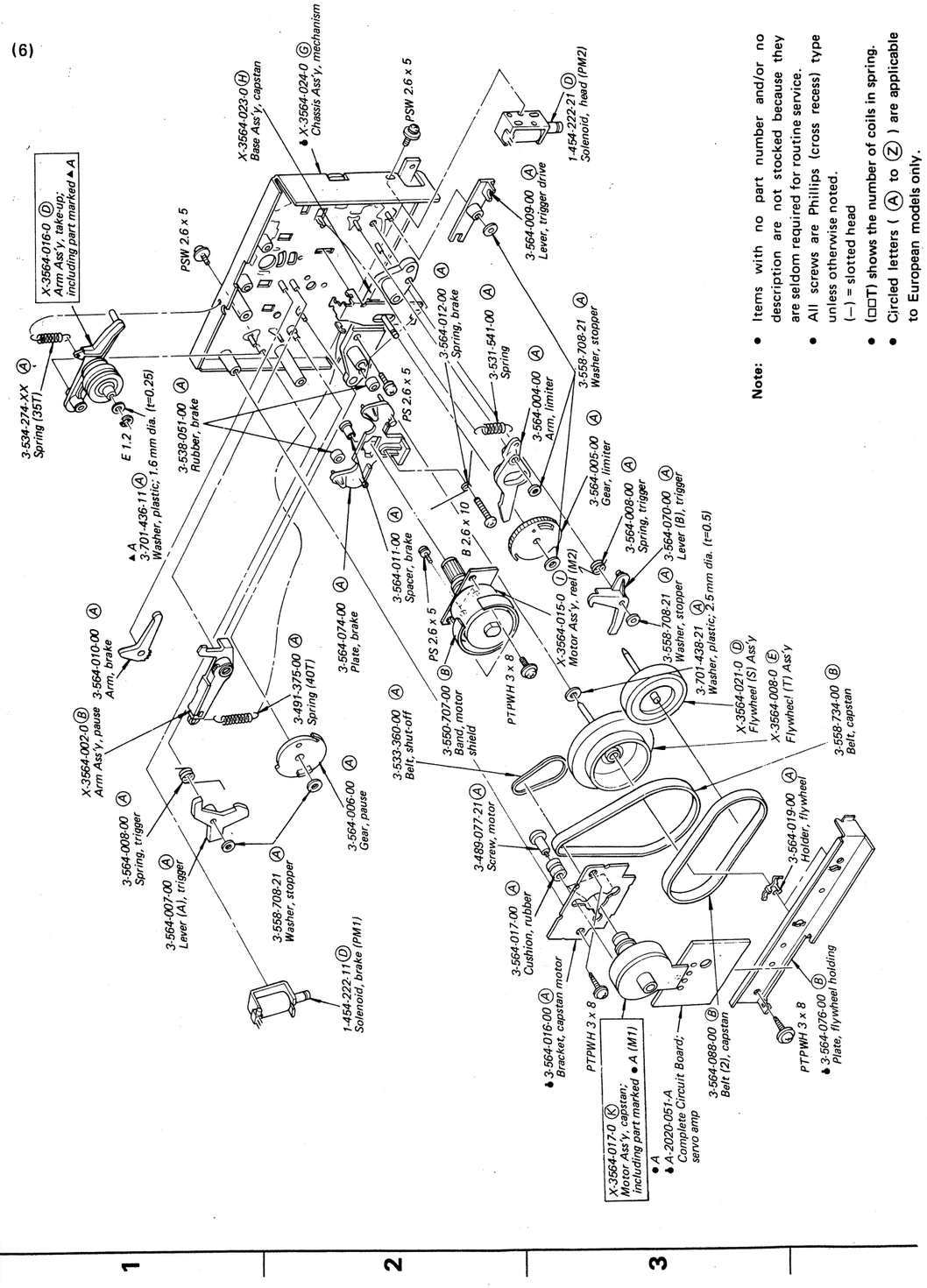
(5)



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

(6)



Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

SECTION 6
ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
		SEMICONDUCTORS
		Transistors
Q101, 201	8-729-113-82	Ⓚ 2SA1138
Q102, 202	8-729-167-62	Ⓑ 2SC2676
Q103, 203	8-729-387-28	Ⓑ 2SA872-E
Q104, 204	8-729-663-47	Ⓒ 2SC1364
Q105, 205	8-729-100-13	Ⓑ 2SC2001
Q106–108, Q206–208	8-729-663-47	Ⓒ 2SC1364
Q109, 209	8-729-665-47	Ⓑ 2SC1362
Q110, 210	8-729-100-13	Ⓑ 2SC2001
Q111, 211	8-729-663-47	Ⓒ 2SC1364
Q301, 302, Q401, 402	8-729-334-58	Ⓑ 2SC1345
Q501	8-729-203-04	Ⓑ 2SK30A
Q502	8-729-141-43	Ⓑ 2SD414
Q503, 504	8-729-665-47	Ⓑ 2SC1362
Q505	8-729-203-04	Ⓑ 2SK30A
Q506, 507	8-729-612-77	Ⓑ 2SA1027R
Q508	8-729-154-83	Ⓑ 2SB548
Q509	8-760-413-10	Ⓑ 2SC1475
Q510	8-729-663-47	Ⓑ 2SC1364
Q511	8-729-612-77	Ⓑ 2SA1027R
Q512–515	8-729-663-47	Ⓑ 2SC1364
Q516	8-729-612-77	Ⓑ 2SA1027R
Q518	8-729-663-47	Ⓑ 2SC1364
Q601	8-729-101-31	Ⓑ N13T1
Q602	8-729-663-47	Ⓑ 2SC1364
Q603–606	8-729-195-23	Ⓑ 2SA952
Q801	8-729-180-93	Ⓑ 2SD809
Q802	8-729-612-77	Ⓑ 2SA1027R
Q803	8-729-154-83	Ⓑ 2SB548
Q804	8-729-663-47	Ⓒ 2SC1364
Q805	8-729-154-83	Ⓑ 2SB548
Q806	8-729-663-47	Ⓒ 2SC1364
Q807	8-729-141-43	Ⓑ 2SD414
Q808	8-729-612-77	Ⓑ 2SA1027R
Q809	8-729-663-47	Ⓒ 2SC1364
Q810	8-729-468-43	Ⓒ 2SA684
Q811, 812	8-760-413-10	Ⓑ 2SC1475
Q817–819	8-729-663-47	Ⓒ 2SC1364
Q820	8-729-101-03	Ⓑ PH103
Q821	8-729-663-47	Ⓒ 2SC1364
Q822	8-729-154-83	Ⓑ 2SB548
Q823, Q1001,1002	8-729-663-47	Ⓒ 2SC1364
Q1003	8-760-335-10	Ⓑ 2SC1474
Q1004	8-729-468-43	Ⓒ 2SA684
Q1005	8-760-335-10	Ⓒ 2SC1474
Q1006	8-729-468-43	Ⓒ 2SA684
		ICs
IC101, 201	8-759-101-74	Ⓕ CX174
IC102, 202	8-759-145-57	Ⓓ μPC4557C
IC103, 203	8-759-145-58	Ⓓ μPC4558C
IC104, 204	8-759-101-74	Ⓕ CX174
IC501	8-759-145-57	Ⓓ μPC4557C
IC601	8-759-993-50	Ⓚ MSL9350
IC801	8-759-147-42	Ⓛ μPD547C-042
IC802, 803	8-759-904-69	Ⓒ MSM4069
IC805	8-759-133-90	Ⓕ μPC339C
IC806	8-759-145-58	Ⓓ μPC4558C
IC1001	8-750-690-00	Ⓓ CX069
IC1002	8-759-145-58	Ⓓ μPC4558C
		Diodes
D101–106, D201–206	8-719-815-55	Ⓑ 1S1555
D501, 502	8-719-910-65	Ⓑ HZ6B2L
D503–510, D512–514	8-719-815-55	Ⓑ 1S1555
D601	1-800-822-11	Ⓚ SEL8806
D801–809	⚠ 8-719-200-02	Ⓑ 10E2
D810, 811	8-719-910-15	Ⓑ HZ11B2L
D812, 813	8-719-815-55	Ⓑ 1S1555
D814	8-719-200-02	Ⓑ 10E2
D815	⚠ 8-719-815-55	Ⓑ 1S1555
D816	8-719-910-23	Ⓑ HZ12A3L

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.		Description
D817	⚠8-719-815-55	(B)	1S1555
D818	8-719-910-23	(B)	HZ12A3L
D819	8-719-910-25	(B)	HZ12B2L
D821	8-719-200-02	(B)	10E2
D828–831	8-719-815-55	(B)	1S1555
D824	8-719-313-31	(B)	SEL1331G
D825	8-719-311-12	(B)	SEL1112R
D826	8-719-317-41	(B)	SEL1741Y
D827	8-719-101-11	(B)	SR110
D832, 833	8-719-815-55	(B)	1S1555
D1001	8-719-910-65	(B)	HZ6B2L

CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics and tantalum. Common capacitors are omitted. Refer to the lists on page 44 and 45 for their part numbers.

C001, 011	1-141-010-XX	(B)	Trimmer		
C102, 202	1-161-319-00	(A)	470p		
C103, 203	1-107-304-00	(B)	150p	100V	silvered mica
C106, 206	1-130-305-00	(B)	0.022	100V	polyethylene
C109, 209	1-123-231-00	(B)	3.3	50V	elect (nonpolarized)
C110, 210	1-130-307-00	(B)	0.027	100V	polyethylene
C111, 211	1-161-323-00	(A)	0.001		
C115, 215	1-123-286-00	(B)	0.33	50V	elect
C121, 221	1-130-341-00	(B)	0.056	100V	polyethylene
C122, 222	1-130-340-00	(B)	0.018	100V	polyethylene
C123, 223	1-130-339-00	(B)	0.0056	100V	polyethylene
C124, 224	1-123-232-00	(B)	4.7	50V	elect (nonpolarized)
C126, 226	1-123-228-00	(B)	1	50V	elect (nonpolarized)
C135, 235	1-123-286-00	(B)	0.33	50V	elect
C141, 241	1-130-341-00	(B)	0.056	100V	polyethylene
C142, 242	1-130-340-00	(B)	0.018	100V	polyethylene
C143, 243	1-130-339-00	(B)	0.0056	100V	polyethylene
C144, 244	1-123-232-00	(B)	4.7	50V	elect (nonpolarized)
C147, 247	1-123-231-00	(B)	3.3	50V	elect (nonpolarized)
C148, 248	1-130-307-00	(B)	0.027	100V	polyethylene
C150, 250	1-123-234-00	(B)	10	50V	elect (nonpolarized)
C156, 256	1-123-232-00	(B)	4.7	50V	elect (nonpolarized)
C303, 403	1-121-651-00	(A)	10	16V	elect

Note: Circled letters ((A) to (Z)) are applicable to European models only.

Ref. No.	Part No.		Description		
C304, 404	1-161-323-00	(A)	0.001		
C305, 405	1-123-230-00	(B)	2.2	50V	elect (nonpolarized)
C306, 406	1-123-228-00	(B)	1	50V	elect (nonpolarized)
C507	1-130-338-00	(B)	0.01	630V	polyethylene
C508	1-130-297-00	(B)	0.01	100V	polyethylene
C509	1-130-303-00	(B)	0.018	100V	polyethylene
C522	1-161-315-00	(A)	220p		
C530, 531	1-131-450-00	(C)	1	35V	tantalum
C601	1-121-651-00	(A)	10	16V	elect
C801, 802	⚠1-123-337-00	(B)	1000	25V	elect
C803, 804	⚠1-123-324-00	(B)	1000	16V	elect
C901	⚠1-130-232-00	(B)	0.22	300V	film (UK model)
C901	⚠1-130-456-00	(C)	0.022	250V	film (AEP model)
C1001,1002	1-123-306-00	(B)	47	10V	elect
C1003	1-123-316-00	(B)	10	16V	elect
C1004	1-123-354-00	(B)	3.3	50V	elect
C1005	1-130-134-00	(B)	0.082	100V	polyethylene
	1-130-232-00	(B)	0.22	300V	film (UK model)
	1-130-456-00	(C)	0.022	250V	film (AEP model)

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on page 46 for their part numbers. kΩ: 1000 Ω, MΩ: 1000 kΩ

R102, 202	1-214-840-00	(B)	100	½W	metal oxide
R104, 204	1-214-881-00	(B)	5.1k	½W	metal oxide
R106, 206	1-214-781-00	(A)	150k		metal oxide
R112, 212	1-214-737-00	(A)	2.2k		metal oxide
R113, 213	1-214-739-00	(A)	2.7k		metal oxide
R124, 224	1-214-765-00	(A)	33k		metal oxide
R125, 225	1-214-757-00	(A)	15k		metal oxide
R134, 234	1-214-872-00	(A)	2.2k	½W	metal oxide
R136, 236	1-214-737-00	(A)	2.2k		metal oxide
R144, 244	⚠1-244-849-00	(A)	100	½W	carbon
R149, 249	⚠1-244-847-00	(A)	82	½W	carbon
R161, 261	1-214-872-00	(B)	2.2k	½W	metal oxide
R162, 262	1-214-872-00	(B)	2.2k	½W	metal oxide
R164, 264	1-214-905-00	(B)	47k	½W	metal oxide
R177, 277	1-214-761-00	(A)	22k		metal oxide
R178, 278	1-214-763-00	(A)	27k		metal oxide
R180, 280	1-214-753-00	(A)	10k		metal oxide
R188, 288	1-214-777-00	(A)	100k		metal oxide
R189, 289					

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Circled letters ((A) to (Z)) are applicable to European models only.

Ref. No.	Part No.		Description		
R191, 291	1-214-737-00	(A)	2.2k		metal oxide
R192, 292	1-214-739-00	(A)	2.7k		metal oxide
R312, 412	1-214-753-00	(A)	10k		metal oxide
R313, 413	1-214-741-00	(A)	3.3k		metal oxide
R502	⚠1-214-856-00	(B)	470	½W	metal oxide
R503	⚠1-214-862-00	(B)	820	½W	metal oxide
R505	⚠1-214-856-00	(B)	470	½W	metal oxide
R506	⚠1-214-862-00	(B)	820	½W	metal oxide
R532, 533	⚠1-244-849-00	(A)	100	½W	carbon
R802	⚠1-212-867-00	(A)	27	¼W	fusible
R805	⚠1-247-240-00	(A)	1k	½W	carbon (nonflammable)
R806	⚠1-217-379-00	(B)	2.2	¼W	fusible
R814, 820	⚠1-212-857-00	(A)	10	¼W	fusible
R922	⚠1-246-433-00	(A)	22	¼W	carbon
RV001, 011	1-226-721-00	(D)	100k/100k-A, variable; BIAS CAL		
RV101, 201	1-224-645-XX	(B)	10k-B, adjustable; playback level		
RV102, RV104, 204	1-226-235-00	(A)	5k-B, adjustable; level meter		
RV105, 205	1-226-560-00	(C)	5k-B, variable; REC LEVEL CAL		
RV106, 206	1-224-646-XX	(B)	22k-B, adjustable; record level		
RV301, 401	1-226-722-00	(E)	20k/20k-A, variable; REC LEVEL		
RV502, 503	1-226-232-00	(B)	500-B, adjustable		
RV1001	1-226-433-00	(D)	50k-B, adjustable; tape speed		

MISCELLANEOUS

CP901	⚠1-231-326-11	(B)	Encapsulated Component (US model)
CP901	⚠1-231-341-00	(C)	Spark Killer (Canadian model)
CP901	⚠1-231-341-00	(C)	Encapsulated Component (E model)
CNJ101, 102, CNJ201, 202	1-507-531-00	(C)	Jack, LINE IN, LINE OUT (fixed)
CNJ103, 203	1-507-526-21	(B)	Jack, LINE OUT (variable)
CNJ301	1-507-553-00	(C)	Jack, HEADPHONES
CNJ302	1-507-525-00	(D)	Jack, MIC
CNJ901	1-561-293-00	(D)	Socket, 4p; REMOTE
CNJ902	⚠1-526-528-00		Socket, AC OUTLET (US, Canadian model)
HE	8-825-604-00	(F)	Head, erase; EF206-36
HRP	8-825-728-00	(U)	Combination Head, record/playback; RPF202-3602A
L101, 201	1-407-240-00	(B)	22mH, inductor, variable
L102, 202	1-408-259-00	(B)	15mH, microinductor

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

• Items marked "♦" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref. No.	Part No.		Description
L301, 401	1-408-253-00	(B)	4.7mH, microinductor
L302, 402	1-408-250-00	(B)	2.7mH, microinductor
L303, 403, L304, 404	1-408-249-00	(B)	2.2mH, microinductor
LPF101, 201	1-231-388-00	(D)	Filter, lowpass
PL1, 2	1-518-340-71	(B)	Lamp, cassette; meter
PL101, 201	1-518-386-00	(B)	Lamp, meter
PM1	1-454-222-11	(D)	Solenoid, brake
PM2	1-454-222-21	(D)	Solenoid, head
M1	X-3564-017-0	(K)	Motor Ass'y, capstan
M2	X-3564-015-0	(I)	Motor Ass'y, reel
S101	1-552-907-00	(D)	Switch, slide; MONITOR
S102	1-552-964-00	(D)	Switch, rotary; CALIBRATION
S103	1-552-879-00	(C)	Switch, pushbutton; INPUT SELECT
S104	1-552-880-00	(C)	Swtich, slide; DOLBY NR
S105	1-552-878-00	(D)	Switch, slide; EQ
S106	1-552-877-00	(C)	Switch, slide; BIAS
S107	1-552-876-00	(D)	Switch, pushbutton, REAK HOLD RESET
S108	1-553-254-00	(D)	Switch, rotary; LINE OUT/PHONES (AEP, E, UK model)
S801	⚠1-552-530-00		Switch, pushbutton; POWER (US, Canadian model)
S801	⚠1-552-903-00	(D)	Switch, pushbutton; POWER (AEP, E, UK model)
S802–808	1-552-919-00	(K)	Switch, block; function
S809		(K)	included in tape counter
S810, 811	1-552-520-00	(C)	Switch, slide; MEMORY, timer
S812, 813	1-552-268-00	(B)	Switch, slide, accidental-erasure prevention, cassette
T301	1-433-213-21	(C)	Transformer, osc
T901	⚠1-446-350-00		Transformer, power (US, Canadian model)
T901	⚠1-446-351-00	(M)	Transformer, power (AEP, UK model)
T901	⚠1-446-518-00		Transformer, power (E model)
	♦1-508-878-00	(A)	Base Post, MCD Connector
	♦1-508-879-00	(B)	Base Post, MCD Connector
	⚠1-526-576-21		Voltage Selector (E model)
	⚠1-534-777-00	(D)	Cord, power (UK model)
	⚠1-534-817-XX	(D)	Cord, power; euro-plug (AEP, E model)
	⚠1-534-986-XX		Cord, power (US, Canadian model)
	♦1-535-116-00	(A)	Terminal with base post 3p
	⚠1-551-473-31		Cord, power; parallel-blade plug (E model)
	♦1-560-060-00	(A)	Connector Pin

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description
♦	1-560-061-00	(A) Connector Pin
♦	1-560-062-00	(B) Connector Pin
♦	1-560-064-00	(B) Connector Pin
♦	1-561-378-00	(B) Connector Pin 3p
♦	1-561-379-00	(B) Connector Pin 4p
♦	1-561-380-00	(B) Connector Pin 5p

COMPLETE CIRCUIT BOARDS

♦	A-2010-153-A	Record/Playback
♦	A-2019-097-A	(S) System Control
♦	A-2020-051-A	Servo Amp/Mic Amp/Control
♦	A-2022-028-A	Mic Amp/Control
♦	A-2029-039-A	(L) Meter

PRINTED CIRCUIT BOARDS

♦	1-600-821-00	(H) Record/Playback
♦	1-600-822-00	(C) Microphone Amp
♦	1-600-823-00	(C) Switch
♦	1-600-824-00	(B) CAL Control
♦	1-600-825-00	(B) Variable Line Out
♦	1-600-826-00	(C) Record EQ
♦	1-600-827-00	(C) Meter
♦	1-600-828-00	(B) Peak Reset Switch
♦	1-600-829-00	(H) System Control
♦	1-600-831-00	(B) Memory Switch
♦	1-600-832-00	(B) Timer Switch
♦	1-600-833-00	(B) Shut-off
♦	1-601-715-00	(B) BIAS Trimmer
♦	1-601-716-00	(B) BIAS CAL Control
♦	1-602-121-00	(B) LINE OUT SW

ACCESSORIES AND PACKING MATERIALS

Part No.	Description
X-3701-105-0	(A) Tip Ass'y, head cleaning
1-551-734-11	(D) Cord, connection; RK-74A
3-561-142-00	Cushion, upper-front (Canadian model)
3-561-143-00	Cushion, upper-rear (Canadian model)
3-561-144-00	Cushion, bottom-right (Canadian model)
3-561-145-00	Cushion, bottom-left (Canadian model)
3-566-148-00	(B) Cushion, upper-front (US, AEP, UK, E model)
3-566-149-00	(B) Cushion, upper-rear (US, AEP, UK, E model)
3-566-150-00	(B) Cushion, bottom-right (US, AEP, UK, E model)
3-566-151-00	(B) Cushion, bottom-left (US, AEP, UK, E model)
3-567-250-00	Carton (E model)
3-701-630-00	(A) Bag, plastic
3-703-157-01	(A) Label, destination
3-783-186-11	Manual, instruction (AEP, UK, E model)
3-783-186-21	Manual, instruction (US model)
3-783-186-21 3-794-826-31	Manual, instruction (Canadian model)
3-793-481-12	(A) Leaflet
3-793-828-11	(A) Caution Card, cassette
3-794-826-31	Leaflet (Canadian model)
4-860-421-00	(B) Bag, protection

Note: Circled letters ((A) to (Z)) are applicable to European models only.

- Items marked "♦" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

ELECTROLYTIC CAPACITORS Note: Circled letter ((A) to (Z)) are applicable to European models only.

→ : Use the high voltage rated one.

CAP. (μF)	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	25 VOLT. PART No.	35 VOLT. PART No.	50 VOLT. PART No.
0.47					→	1-121-726-00 (A)
1.0					→	1-121-391-00 (A)
2.2					→	1-121-450-00 (A)
3.3	→	→	→	1-121-392-00 (A)	→	1-121-393-00 (A)
4.7	→	→	→	1-121-395-00 (A)	→	1-121-396-00 (A)
10	→	→	1-121-651-00 (A)	1-121-398-00 (A)	→	1-121-738-00 (A)
22	→	→	1-121-479-00 (A)	1-121-480-00 (A)	1-121-662-00 (A)	1-121-152-00 (A)
33	→	→	1-121-403-00 (A)	1-121-404-00 (A)	1-121-652-00 (B)	1-121-405-00 (A)
47	→	1-121-352-00 (A)	1-121-409-00 (A)	1-121-410-00 (A)	1-121-653-00 (B)	1-121-411-00 (A)
100	→	1-121-414-00 (A)	1-121-415-00 (A)	1-121-416-00 (A)	1-121-357-00 (B)	1-121-417-00 (B)
220	1-121-419-00 (B)	1-121-420-00 (B)	1-121-421-00 (A)	1-121-422-00 (B)	1-121-261-00 (C)	1-121-423-00 (B)
330	1-121-751-00 (B)	1-121-805-00 (B)	1-121-521-00 (C)	1-121-654-00 (B)	1-121-655-00 (D)	1-121-656-00 (C)
470	1-121-424-00 (B)	1-121-425-00 (C)	1-121-426-00 (C)	1-121-733-00 (B)	1-121-361-00 (E)	1-121-810-00 (D)
1000	–	1-121-736-00 (C)	1-121-245-00 (D)	1-121-657-00 (D)	1-121-388-00 (E)	1-123-061-00 (F)
2200	1-121-658-00 (B)	1-121-659-00 (C)	1-121-660-00 (D)	1-123-067-00 (F)	1-121-984-00 (F)	–
3300	1-121-661-00 (D)	1-123-075-00 (E)	1-123-071-00 (F)	–	–	–

CAP. (μF)	100 VOLT. PART No.	160 VOLT. PART No.	250 VOLT. PART No.	350 VOLT. PART No.
0.47	–	–	–	–
1.0	1-123-249-00 (A)	1-123-252-00 (A)	1-123-003-00 (B)	1-121-168-00 (B)
2.2	1-123-250-00 (A)	1-123-026-00 (B)	–	1-123-028-00 (B)
3.3	1-121-995-00 (A)	–	1-123-004-00 (B)	1-123-006-00 (C)
4.7	1-123-255-00 (A)	1-121-246-00 (B)	1-121-759-00 (B)	1-123-007-00 (D)
10	1-121-126-00 (B)	1-121-999-00 (B)	1-123-254-00 (C)	1-123-008-00 (D)
22	1-121-996-00 (C)	1-123-253-00 (C)	1-123-005-00 (D)	1-123-022-00 (D)
33	1-121-997-00 (C)	1-121-757-00 (C)	–	–
47	1-123 251-00 (C)	1-121-919-00 (C)	–	–
100	1-123-084-00 (E)	–	–	–

CERAMIC CAPACITORS (A)

CAP. (pF)	50 VOLT. PART No.	CAP. (pF)	50 VOLT. PART No.	CAP. (pF)	50 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS (A)

→ : Use the high voltage rated one.

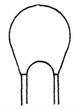
CAP. (μF)	25 VOLT. PART No.	50 VOLT. PART No.	CAP. (μF)	25 VOLT. PART No.	50 VOLT. PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

MYLAR CAPACITORS Ⓐ

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

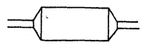
CAP. (μF)	RATING 50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	–	–
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	–	–
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	–	–
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	–	–
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00				
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00				
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00				

TANTALUM CAPACITORS



CAP. (μF)	RATING → : Use the high voltage rated one. 3.15 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	25 VOLT. PART No.	35 VOLT. PART No.
0.01					→	→	1-131-396-00 Ⓑ
0.015						→	1-131-397-00 Ⓑ
0.022						→	1-131-398-00 Ⓑ
0.033						→	1-131-399-00 Ⓑ
0.047						→	1-131-400-00 Ⓑ
0.068					→	→	1-131-401-00 Ⓑ
0.1					→	→	1-131-402-00 Ⓑ
0.15					→	→	1-131-403-00 Ⓑ
0.22					→	→	1-131-404-00 Ⓑ
0.33					→	1-131-409-00 Ⓑ	1-131-405-00 Ⓑ
0.47	–	–	–	–	1-131-412-00 Ⓑ	→	1-131-406-00 Ⓑ
0.68	–	–	–	1-131-415-00 Ⓑ	→	1-131-410-00 Ⓑ	1-131-407-00 Ⓑ
1.0	–	–	1-131-418-00 Ⓑ	–	1-131-413-00 Ⓑ	→	1-131-408-00 Ⓑ
1.5	–	1-131-421-00 Ⓑ	–	1-131-416-00 Ⓑ	→	1-131-411-00 Ⓑ	1-131-348-00 Ⓑ
2.2	1-131-424-00 Ⓑ	–	1-131-419-00 Ⓑ	–	1-131-414-00 Ⓑ	1-131-355-00 Ⓑ	1-131-349-00 Ⓑ
3.3	–	1-131-422-00 Ⓑ	–	1-131-417-00 Ⓑ	1-131-362-00 Ⓑ	1-131-356-00 Ⓑ	1-131-350-00 Ⓑ
4.7	1-131-425-00 Ⓑ	–	1-131-420-00 Ⓑ	1-131-369-00 Ⓑ	1-131-363-00 Ⓑ	1-131-357-00 Ⓑ	1-131-351-00 Ⓒ
6.8	–	1-131-423-00 Ⓑ	1-131-376-00 Ⓑ	1-131-370-00 Ⓑ	1-131-364-00 Ⓑ	1-131-358-00 Ⓒ	1-131-352-00 Ⓒ
10	1-131-426-00 Ⓑ	1-131-383-00 Ⓑ	1-131-377-00 Ⓑ	1-131-371-00 Ⓑ	1-131-365-00 Ⓒ	1-131-359-00 Ⓒ	1-131-353-00 Ⓓ
15	1-131-390-00 Ⓑ	1-131-384-00 Ⓑ	1-131-378-00 Ⓑ	1-131-372-00 Ⓑ	1-131-366-00 Ⓒ	1-131-360-00 Ⓓ	–
22	1-131-391-00 Ⓑ	1-131-385-00 Ⓑ	1-131-379-00 Ⓒ	1-131-373-00 Ⓒ	1-131-367-00 Ⓓ		
33	1-131-392-00 Ⓑ	1-131-386-00 Ⓒ	1-131-380-00 Ⓒ	1-131-374-00 Ⓓ			
47	1-131-393-00 Ⓒ	1-131-387-00 Ⓒ	1-131-381-00 Ⓓ	–			
68	1-131-394-00 Ⓑ	1-131-388-00 Ⓒ	–	–			
100	1-131-395-00 Ⓓ	–	–	–			

TANTALUM CAPACITORS



CAP. (μF)	RATING 3 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	35 VOLT. PART No.
0.033						1-131-273-00 Ⓔ
0.047						1-131-274-00 Ⓔ
0.068						1-131-275-00 Ⓔ
0.1						1-131-276-00 Ⓓ
0.15						1-131-277-00 Ⓓ
0.22			–	–	1-131-262-00 Ⓓ	1-131-278-00 Ⓓ
0.33			–	–	1-131-263-00 Ⓓ	1-131-279-00 Ⓓ
0.47			1-131-169-00 Ⓓ	–	1-131-264-00 Ⓓ	1-131-280-00 Ⓓ
0.68			–	1-131-258-00 Ⓓ	1-131-265-00 Ⓓ	1-131-281-00 Ⓓ
1.0			1-131-254-00 Ⓓ	–	1-131-266-00 Ⓓ	1-131-282-00 Ⓓ
1.5		1-131-250-00 Ⓓ	–	–	1-131-267-00 Ⓓ	1-131-283-00 Ⓔ
2.2		–	–	1-131-259-00 Ⓓ	1-131-268-00 Ⓓ	1-131-284-00 Ⓔ
3.3		–	1-131-255-00 Ⓓ	–	1-131-269-00 Ⓓ	–
4.7		1-131-251-00 Ⓔ	1-131-171-00 Ⓓ	–	1-131-270-00 Ⓓ	–
6.8		–	–	1-131-260-00 Ⓓ	1-131-271-00 Ⓔ	–
10	–	–	1-131-256-00 Ⓓ	–	1-131-272-00 Ⓔ	–
15	–	1-131-252-00 Ⓓ	–	1-131-261-00 Ⓔ		
22	–	–	1-131-257-00 Ⓔ	–		
33	1-131-176-00 Ⓓ	1-131-253-00 Ⓔ	1-131-173-00 Ⓒ	–		
47	1-131-288-00 Ⓕ	1-131-174-00 Ⓓ	–	–		
100	1-131-177-00 Ⓓ					

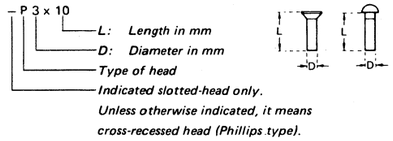
1/4 WATT CARBON RESISTORS Ⓐ

Note: Circled letter Ⓐ is applicable to European models only.

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-576-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-577-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-578-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-579-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-580-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-581-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-582-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-583-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-584-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-585-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-586-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-587-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

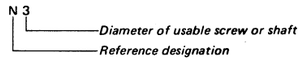
HARDWARE NOMENCLATURE

Screw:



Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Nut, Washer, Retaining ring:



Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

Sony Corporation

9-954-880-01
with RM-50

80B02112-1
Printed in Japan

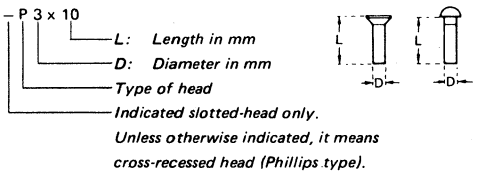
1/4 WATT CARBON RESISTORS Ⓐ

Note: Circled letter Ⓐ is applicable to European models only.

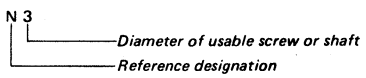
Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-576-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-577-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-578-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-579-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-580-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-581-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-582-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-583-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-584-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-585-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-586-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-587-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:



Nut, Washer, Retaining ring:



Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

Sony Corporation

9-954-880-01
with RM-50

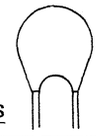
80B02112-1
Printed in Japan

MYLAR CAPACITORS Ⓐ

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

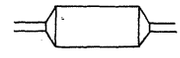
CAP. (μF)	RATING 50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	–	–
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	–	–
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	–	–
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	–	–
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00				
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00				
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00				

TANTALUM CAPACITORS



CAP. (μF)	RATING → : Use the high voltage rated one. 3.15 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	25 VOLT. PART No.	35 VOLT. PART No.
0.01					→	→	1-131-396-00 Ⓑ
0.015						→	1-131-397-00 Ⓑ
0.022						→	1-131-398-00 Ⓑ
0.033						→	1-131-399-00 Ⓑ
0.047						→	1-131-400-00 Ⓑ
0.068					→	→	1-131-401-00 Ⓑ
0.1					→	→	1-131-402-00 Ⓑ
0.15					→	→	1-131-403-00 Ⓑ
0.22					→	→	1-131-404-00 Ⓑ
0.33					→	1-131-409-00 Ⓑ	1-131-405-00 Ⓑ
0.47	–	–	–	–	1-131-412-00 Ⓑ	→	1-131-406-00 Ⓑ
0.68	–	–	–	1-131-415-00 Ⓑ	→	1-131-410-00 Ⓑ	1-131-407-00 Ⓑ
1.0	–	–	1-131-418-00 Ⓑ	–	1-131-413-00 Ⓑ	→	1-131-408-00 Ⓑ
1.5	–	1-131-421-00 Ⓑ	–	1-131-416-00 Ⓑ	→	1-131-411-00 Ⓑ	1-131-348-00 Ⓑ
2.2	1-131-424-00 Ⓑ	–	1-131-419-00 Ⓑ	–	1-131-414-00 Ⓑ	1-131-355-00 Ⓑ	1-131-349-00 Ⓑ
3.3	–	1-131-422-00 Ⓑ	–	1-131-417-00 Ⓑ	1-131-362-00 Ⓑ	1-131-356-00 Ⓑ	1-131-350-00 Ⓑ
4.7	1-131-425-00 Ⓑ	–	1-131-420-00 Ⓑ	1-131-369-00 Ⓑ	1-131-363-00 Ⓑ	1-131-357-00 Ⓑ	1-131-351-00 Ⓒ
6.8	–	1-131-423-00 Ⓑ	1-131-376-00 Ⓑ	1-131-370-00 Ⓑ	1-131-364-00 Ⓑ	1-131-358-00 Ⓒ	1-131-352-00 Ⓒ
10	1-131-426-00 Ⓑ	1-131-383-00 Ⓑ	1-131-377-00 Ⓑ	1-131-371-00 Ⓑ	1-131-365-00 Ⓒ	1-131-359-00 Ⓒ	1-131-353-00 Ⓓ
15	1-131-390-00 Ⓑ	1-131-384-00 Ⓑ	1-131-378-00 Ⓑ	1-131-372-00 Ⓑ	1-131-366-00 Ⓒ	1-131-360-00 Ⓓ	–
22	1-131-391-00 Ⓑ	1-131-385-00 Ⓑ	1-131-379-00 Ⓒ	1-131-373-00 Ⓒ	1-131-367-00 Ⓓ		
33	1-131-392-00 Ⓑ	1-131-386-00 Ⓒ	1-131-380-00 Ⓒ	1-131-374-00 Ⓓ			
47	1-131-393-00 Ⓒ	1-131-387-00 Ⓒ	1-131-381-00 Ⓓ	–			
68	1-131-394-00 Ⓑ	1-131-388-00 Ⓒ	–	–			
100	1-131-395-00 Ⓓ	–	–	–			

TANTALUM CAPACITORS



CAP. (μF)	RATING 3 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	35 VOLT. PART No.
0.033						1-131-273-00 Ⓔ
0.047						1-131-274-00 Ⓔ
0.068						1-131-275-00 Ⓔ
0.1						1-131-276-00 Ⓓ
0.15						1-131-277-00 Ⓓ
0.22			–	–	1-131-262-00 Ⓓ	1-131-278-00 Ⓓ
0.33			–	–	1-131-263-00 Ⓓ	1-131-279-00 Ⓓ
0.47			1-131-169-00 Ⓓ	–	1-131-264-00 Ⓓ	1-131-280-00 Ⓓ
0.68			–	1-131-258-00 Ⓓ	1-131-265-00 Ⓓ	1-131-281-00 Ⓓ
1.0			1-131-254-00 Ⓓ	–	1-131-266-00 Ⓓ	1-131-282-00 Ⓓ
1.5		1-131-250-00 Ⓓ	–	–	1-131-267-00 Ⓓ	1-131-283-00 Ⓔ
2.2		–	–	1-131-259-00 Ⓓ	1-131-268-00 Ⓓ	1-131-284-00 Ⓔ
3.3		–	1-131-255-00 Ⓓ	–	1-131-269-00 Ⓓ	–
4.7		1-131-251-00 Ⓔ	1-131-171-00 Ⓓ	–	1-131-270-00 Ⓓ	–
6.8		–	–	1-131-260-00 Ⓓ	1-131-271-00 Ⓔ	–
10	–	–	1-131-256-00 Ⓓ	–	1-131-272-00 Ⓔ	–
15	–	1-131-252-00 Ⓓ	–	1-131-261-00 Ⓔ		
22	–	–	1-131-257-00 Ⓔ	–		
33	1-131-176-00 Ⓓ	1-131-253-00 Ⓔ	1-131-173-00 Ⓒ	–		
47	1-131-288-00 Ⓕ	1-131-174-00 Ⓓ	–	–		
100	1-131-177-00 Ⓓ					

STEREO CASSETTE DECK

TC-K81

US Model
Canadian Model
AEP Model
UK Model
E Model

SUPPLEMENT

File this supplement with the service manual.
Add the record head azimuth adjustment as shown page 2.

No. 1
September, 1980

Correction
— Page 13 —

Incorrect	Correct
Record/playback Head Azimuth Adjustment	Playback Head Azimuth Adjustment

SONY®
SERVICE MANUAL
402

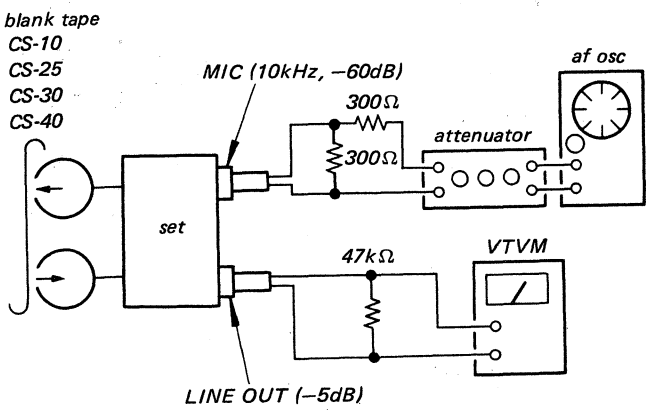
Record Head Azimuth Adjustment

Setting:

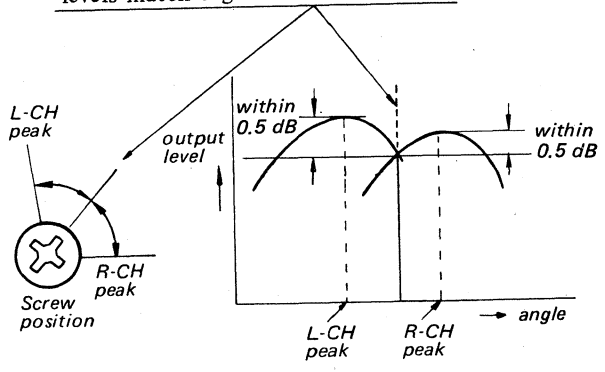
MONITOR switch: TAPE

Procedure:

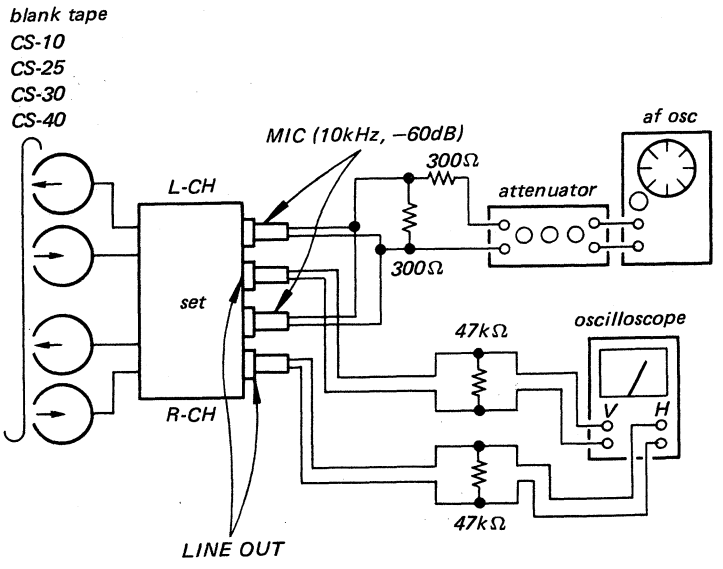
1. Mode: record

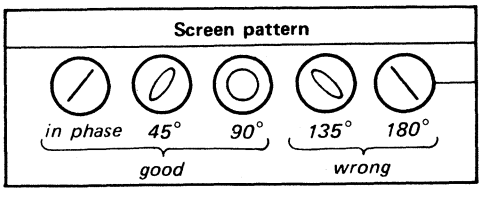


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw where both of output levels match together within 0.5 dB.

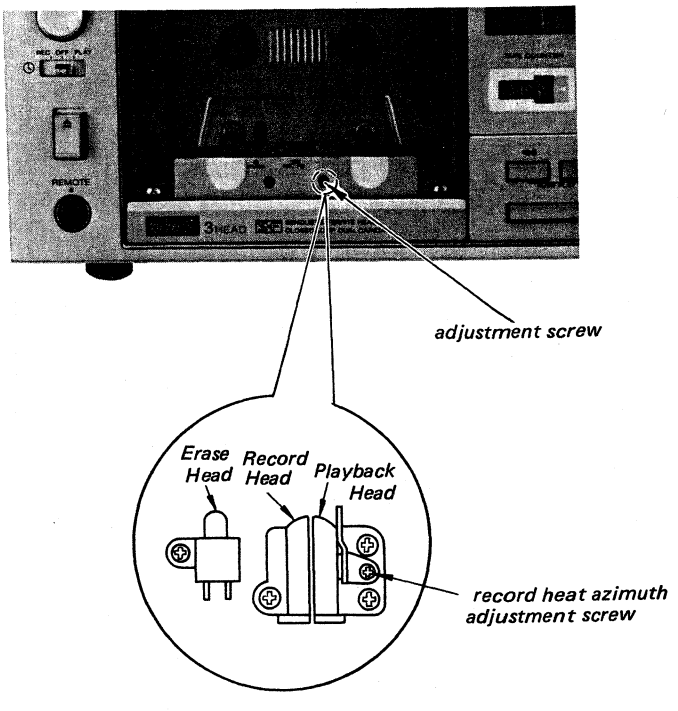


3. Phase Check
Mode: record





Adjustment Location:



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